



MEMRECAM GO-4K

User's manual

ST-907 MEMRECAM GO-4K

February 2024

For safety precautions, refer to the separate "Safety Precautions".

Some equipment may have warning labels or indications in areas that require attention for safety when using the equipment. Be sure to read the warning messages before operating the equipment. In addition, please read the instruction manual or user's manual of the equipment carefully to ensure correct and safe use.

If there are any questions about the equipment, please contact the distributor directly.

Trademarks

MEMRECAM is a trademark of NAC Image Technology. Microsoft Windows is a registered trademark of Microsoft Corporation USA.

Other company names and product names noted here are trademarks or registered trademarks of those companies.

This manual contains instructions for camera firmware Ver. 0.8.3.

Reproduction or duplication of any or all of this document without the express written consent of NAC Image Technology is strictly prohibited.

The photos and illustrations in this manual may differ from the appearance of the product.

The contents of this document may change without notice. Please check beforehand.

Copyright (C) 2024 NAC Image Technology.

The copyright for this manual belongs to NAC Image Technology.

Table of Contents

Table of Contents.....	3	Shape, environment, precision, standards, disposables, dimensional drawings.....	152
Features of This Unit.....	4	Main Accessories, Options.....	154
Introduction			
Preparation before use	6	Revision History	163
External Appearance and Names of Each Part	8	Contacts.....	164
Camera Setup			
Mount the Lens	22		
Adjust the Lens Aperture	23		
Connecting Ethernet cable	25		
Until the power is turned on	27		
Until the power is turned off.....	33		
Restore the camera to factory settings ..	35		
Connect Camera and tablet PC	37		
Connect the tablet using a USB Wi-Fi adapter	44		
Connect multiple cameras and tablets ...	45		
GO-Touch			
About GO-Touch	48		
GO-Touch Part Descriptions	49		
INFO.....	57		
Network Configuration.....	65		
LIVE	75		
PLAY	94		
External USB Storage.....	116		
Lighting device control function	123		
Specification			
Image sensor.....	126		
Recorder	130		
System Control	132		
Connector.....	140		

Features of This Unit

MEMRECAM GO is a digital high-speed camera designed to analyze fast-moving phenomena.

Compact integrated

Small size, equivalent to MEMRECAM GO-9/12. Integrated system with built-in recording section enables recording/analysis of high-speed phenomena.

High-speed, high-resolution image sensors

Equipped with a high-sensitivity CMOS sensor capable of high resolution and high speed drive.

Effective pixels 4608x2176	Maximum 1,000 frames/sec
Effective pixels 4608x32	Maximum 20,000 frames/sec

Flexible Image Playback

Slow motion playback of recorded images or repeated playback in a specified range is possible. Detailed image analysis can be conducted with on Tablet PC and PC.

High-speed network transfer

Recorded images, including setting data and trigger time, can be saved to a PC via a network. 1000BASE-T compatible Ethernet allows for high-speed transfer of large video data with high resolution and long duration. The camera can also save data directly to USB-compatible external recording media connected to the camera's USB port.

Various External Interfaces

1000BASE-T compatible Ethernet, USB2.0, USB3.1 (USB Type-C), exposure start signal input, IRIG-B signal input, discrete status signal input/output, exposure pulse signal output, recording trigger signal input/output and many external I/O interfaces. Supports a wide range of recording conditions as a system.

1

Introduction

Preparation before use	6
External Appearance and Names of Each Part	8

Preparation before use

Prepare the camera before use.

The table below is an example of preparation.

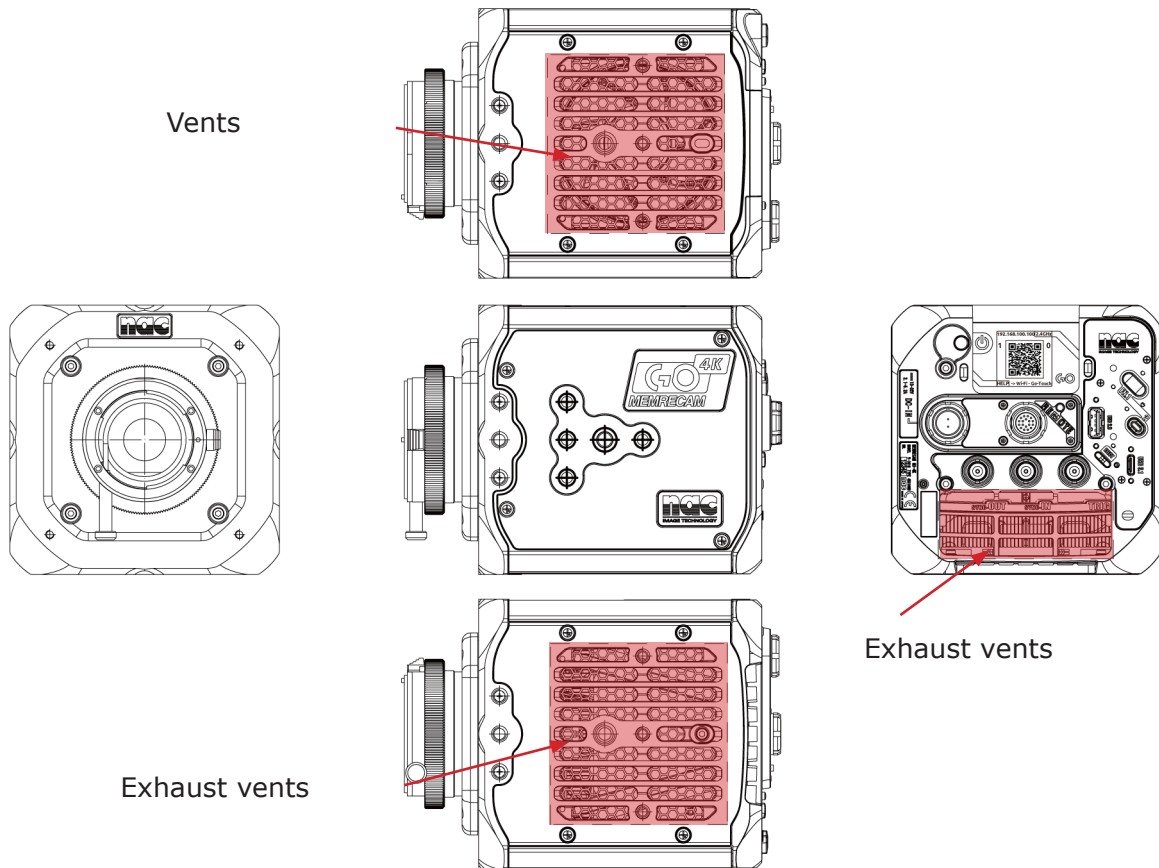
Camera	GO-4K
Lens	F Mount lenses
Power supply for cameras	Such as AC adapters and batteries
Operator (PC, tablets)	The camera body does not have a video output connector. Be sure to prepare an operating device such as a PC or tablets.
External storage medium	Data can be downloaded directly from the camera to an external USB storage device.
Equipment required for recording	Lighting, tripod

Be careful when installing the camera

The camera is cooled by a fan.

Do not block any vents.

Do not block both exhaust vents. Be sure to open one point.

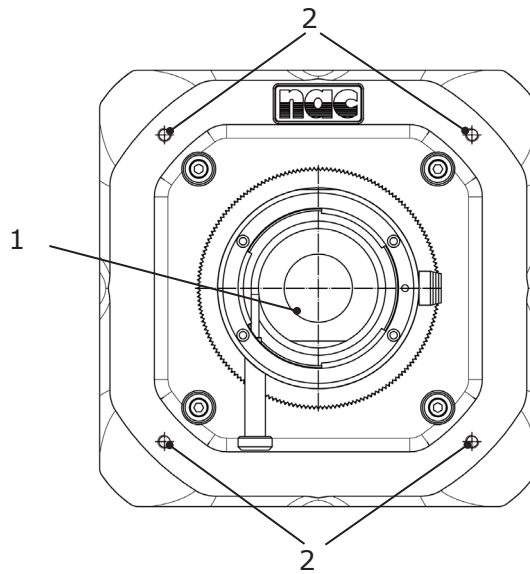


Precautions when using the Wi-Fi adapter

When using a Wi-Fi adapter, only the 2.4 GHz band can be used.

External Appearance and Names of Each Part

Front panel



1	Lens Mount The illustration shows F mounted.
2	Screw hole (4 holes M4 depth 8mm)

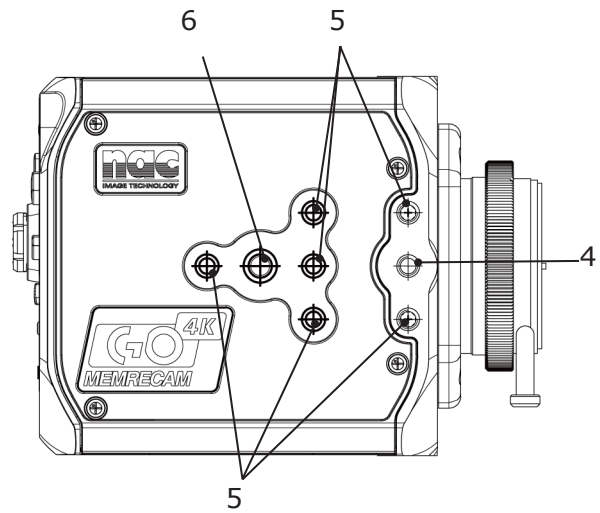
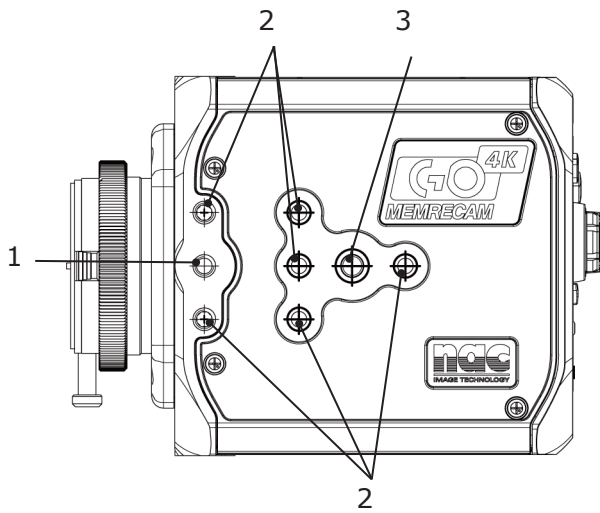


Attention

Do not insert screws beyond the depth of the screw holes as this may cause malfunction.



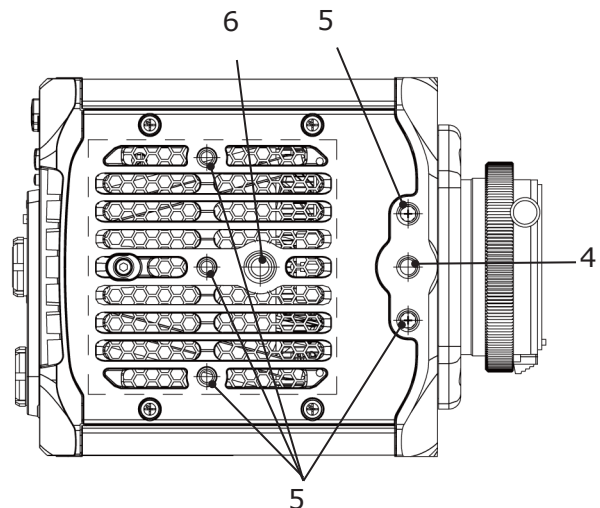
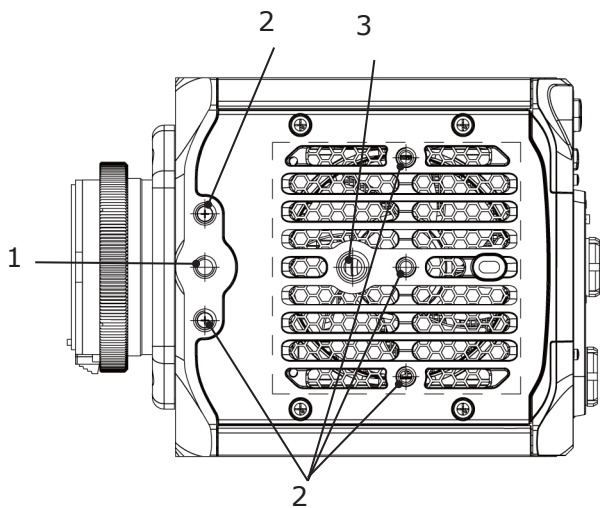
Left and right sides of the camera



1	Screw hole (1 hole 1/4-20UNC depth 9mm)
2	Screw hole (6 holes 1/4-20 depth 5.5mm)
3	Screw hole (1 hole 3/8-16UNC depth 8mm)

4	Screw hole (1 hole 1/4-20UNC depth 9mm)
5	Screw hole (6 holes 1/4-20 depth 5.5mm)
6	Screw hole (1 hole 3/8-16UNC depth 8mm)

Top and bottom of the camera



1	Screw hole (1 hole 1/4-20UNC depth 9mm)
2	Screw hole (5 holes 1/4-20 depth 5.5mm)
3	Screw hole (1 hole 3/8-16UNC depth 5.5mm)

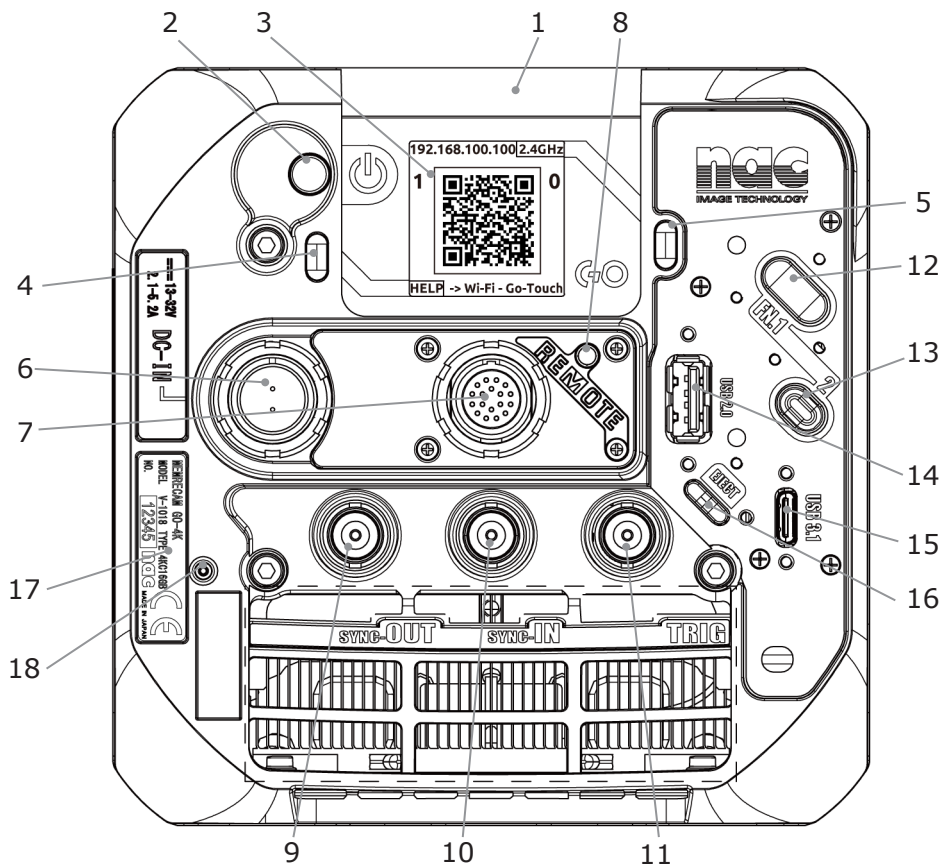
4	Screw hole (1 hole 1/4-20UNC depth 9mm)
5	Screw hole (5 holes 1/4-20 depth 5.5mm)
6	Screw hole (1 hole 3/8-16UNC depth 5.5mm)



Attention

Do not insert screws beyond the depth of the screw holes as this may cause malfunction.

Rear panel



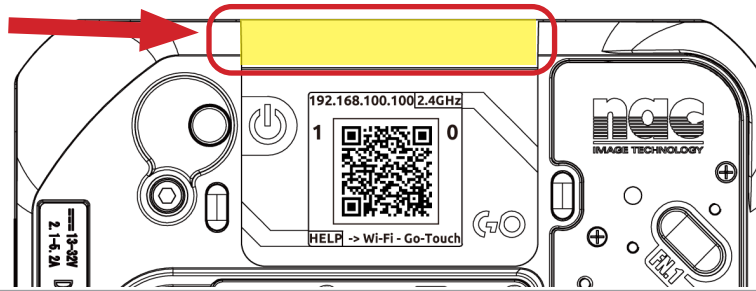
1	CAMERA MODE LED
2	PWR BTN & POWER LED
3	E-paper
4	EPAPER BTN & LED
5	FUNC BTN 3
6	DC-IN connector
7	REMOTE connector
8	ETHERNET LED
9	SYNC-OUT connector
10	SYNC-IN connector

11	TRIG connector
12	FUNC BTN 1
13	FUNC BTN 2
14	USB 2.0 connector
15	USB 3.1 connector
16	EJECT BTN & LED
17	Product name plate(shows the product number)
18	RESET BTN



Respective LEDs

CAMERA MODE LED

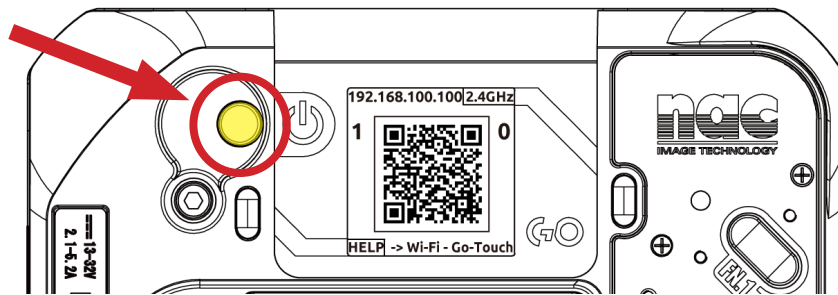


LED Status	Operation
Orange	<p>REC mode.</p> <p>Displays trigger detection status while the camera image is being recorded by memory. Indicates the recording status to the recording memory by changing the brightness of orange due to light and dark.</p> <p>After the trigger input, it changes from light to dark.</p> <p>The less frames remaining, the darker the orange brightness.</p>
Yellow	<p>ARM mode.</p> <p>From the time ARM is started until the time the picture is recorded for the number of frames before the trigger.</p> <p>A change in brightness due to light and dark in yellow indicates the recording status to the recording memory. Dark to Light: Indicates the lapse rate of recording for the number of frames before triggering. It turns white when recording is complete for the number of frames before triggering.</p>
White	<p>ARM mode.</p> <p>Recorded memory is discarded, and the camera image is being recorded to memory. Displays the recording status to the recording memory with the change of white brightness due to light and dark.</p> <p>The ratio of the light/dark changes varies depending on the trigger timing setting.</p> <p>Dark to Light: Indicates the lapse rate of recording for the number of frames before triggering.</p> <p>Light to Dark: Indicates the lapse rate of recording for the number of frames after triggering.</p>
Blue	<p>Recording memory is full and cannot be recorded.</p> <p>The camera is not recording video, but a live video is displayed (VIEW mode).</p>
Not lit	Power OFF or sleep state.
Flashing	<p>Set to EST mode, and EST pulse is input.</p> <p>However, only ARM mode and REC mode. Flashing by alternately turning on and off.</p>

CAMERA MODE LED

LED Status	Operation
Flashing green	Waiting to save to external USB storage device. Saving to an external USB storage device has started, but is not yet complete because the external USB storage device is not connected. Check the connection status of the external USB storage device.

PWR BTN & POWER LED (LED and button in one)



LED Status	Camera's power status	Operation
Flashing white	Power on	Camera is activated.
White	Power on	Camera starts up and is in normal status.
Flashing red (1 Second interval)	Power on	Fail (abnormal) state.
Orange	Power off	External power is being supplied and the camera is turned off with the power switch. The external power supply voltage is within the specification range (13 to 32V) and in normal condition.
Flashing red (0.5 Second interval)	Power off	External power is being supplied and the camera is turned off with the power switch. The external power supply voltage is outside the specified range (13 to 32V) and is abnormal.
Flashing orange (1 Second interval)	Power on	From the moment the power is pressed until the power is turned OFF.



LED Status	Camera's power status	Operation
Flashing orange 2-second cycle (Lit for 1.5 sec, off for 0.5 seconds)	Power on	Sleep state.
Yellow	Power on	RESET button is pressed (maximum duration: approx. 1.9 sec.).
Flashing blue (1 Second interval)	Power on	The status between the camera's power ON and the camera's startup.
		Camera is rebooting.
Flashing green (1 Second interval)	Power on	Factory reset in progress.
Not lit	Power off	No external power supply.
Red and green alternating lights		Thermal shutdown occurs.

Operation	Function
Short press	Turns the camera power on and off.
	The camera goes from the ON state to the sleep state.
	The camera goes from sleep status to power on status.
Long press	Forces the camera power from the ON state to the OFF state.

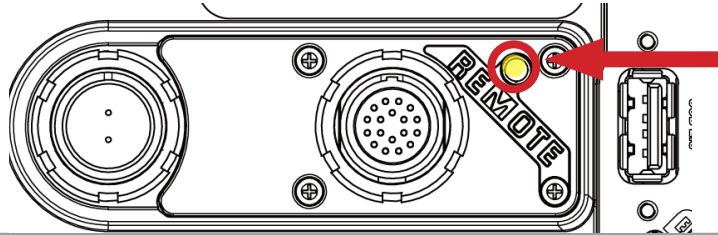


- All images recorded in the camera's memory will be lost if the power is turned off, thermal shutdown occurs, or the camera goes to sleep.



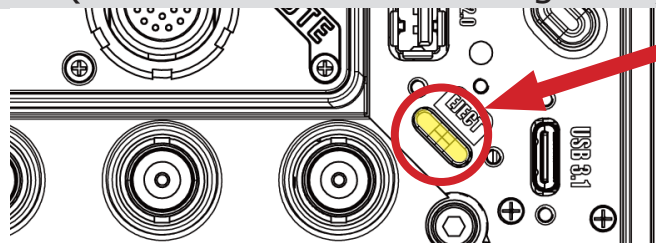
- Thermal shutdown automatically shuts down the camera when the internal temperature becomes extremely high.
 - If a thermal shutdown occurs, turn off AC adapter or remove the battery, turn off the power to the camera, and then turn it on again to restart.
 - The fail status means that one of failure detection, power supply voltage abnormality detection, sensor temperature rise detection, trigger signal abnormality detection, or setting abnormality detection has occurred during camera activation.

ETHERNET LED



LED Status	Operation
Yellow-green	Linking in 1000BASE-T.
Orange	Linking in 100BASE-TX.
Not lit	Not connected to network or powered off.

EJECT LED & BTN (LED and button are integrated)



LED Status	Operation
Flashing Blue	The camera is recognizing the connected device.
Yellow-green	External USB storage connected to USB2.0 connector. Ready for storage. USB3.1 connector with external USB storage device not compatible with USB3. Ready for storage.
White	USB3 capable external USB storage-attached to USB3.1 connector. Storable status.
Flashing green (Low speed)	Data storage to the external USB storage started, but USB storage is not connected and the storage is waiting to be saved. Blinks in synchronization with CAMERA MODE LED.
Flashing green (High speed)	Data-saving to external USB storage. (Common to USB3.1 and USB2.0 Connectors)
Not lit	Removable external USB storage. No external USB storage-connected. Unavailable external USB storage connectivity status (Format USB storage).

Operation	Function
Press the button	Removing external USB storage.



Removing an External USB Storage

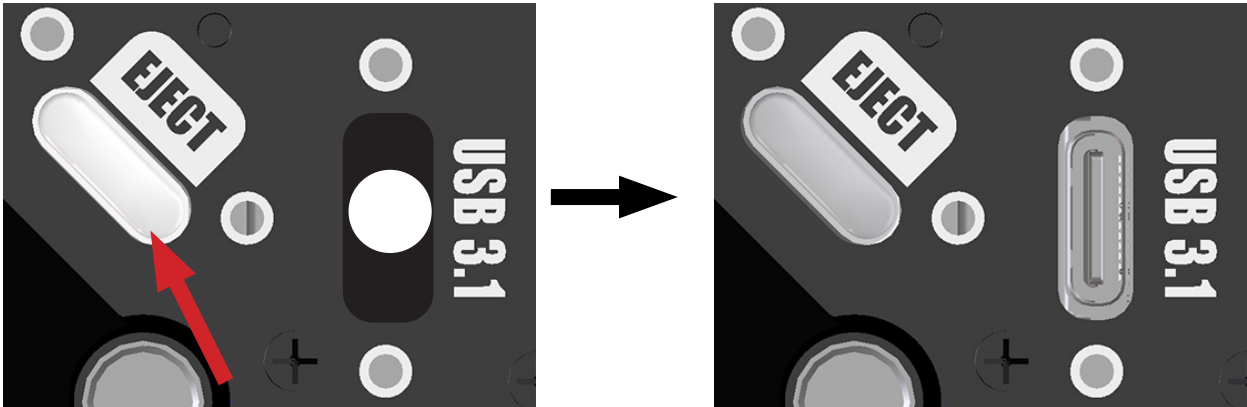
- (1) Press the EJECT button that is lit.
- (2) When the EJECT button goes off, the external USB storage device can be removed.



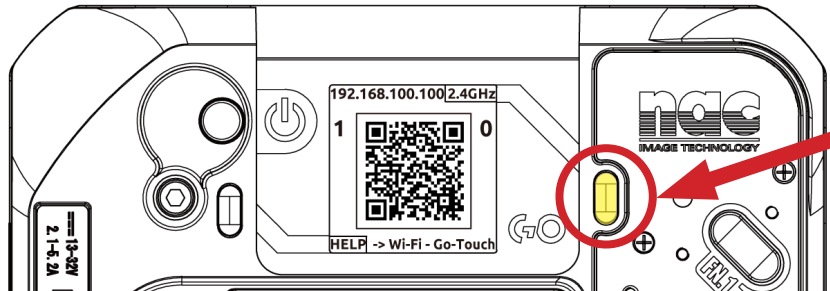
Attention

Pressing the EJECT button during external USB storage saving will force the saving process to terminate.

Please press the EJECT button after data saving is finished.



FUNC BTN 3 (LED and button are integrated) When Wi-Fi adapter is connected.



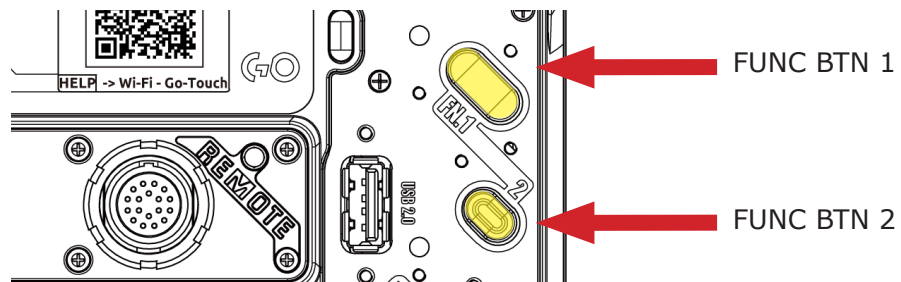
LED Status	Operation
White light	Wi-Fi adapter enabled state.
White Flashing	The connected Wi-Fi adapter does not work.
Not lit	Wi-Fi adapter disabled.

Operation	Function
Short press	Wireless function ON/OFF

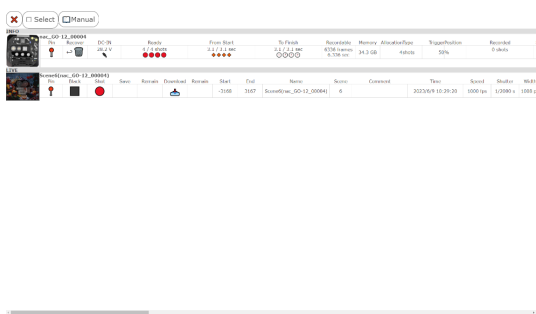
External Appearance and Names of Each Part

FUNC BTN 1	
Operation	Function
Press the button	Trigger input

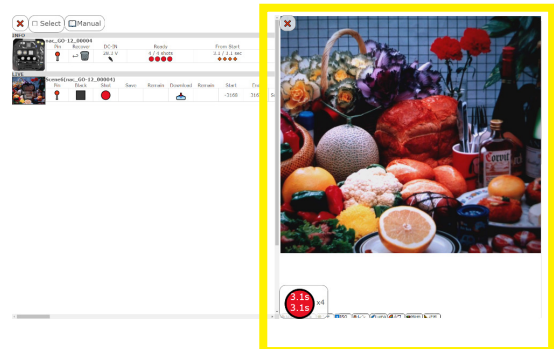
FUNC BTN 2	
Operation	Function
Short press	Turn on/off LIVE display on GO-Touch (if item thumbnail is displayed)
Long press	Delete last recorded video



FUNC BTN2 Transition on short press



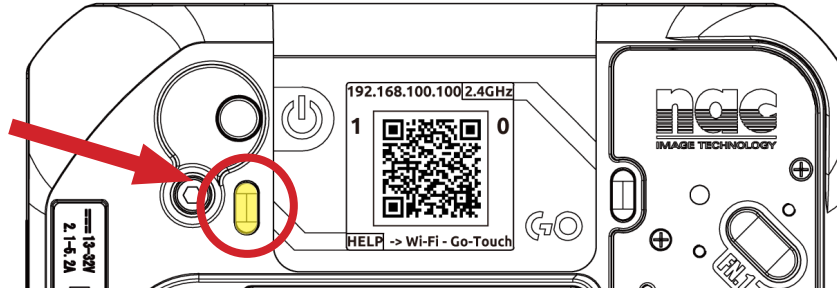
Item thumbnail display



View LIVE



EPAPER BTN & LED (LED and button are integrated)



LED Status	Operation
White	EPAPER BTN is pressed.
Not lit	EPAPER BTN is not pressed.

Operation	Function
Press the button	Switching e-paper display

E-paper

E-paper on the back displays camera information and a QR code for Wi-Fi connectivity

IP address of the camera's wired LAN

Wi-Fi adapter frequency band

Number of cameras in the same network (GO cameras only)

QR Code

Current display contents

Number of tablets and PCs connected to the camera via Wi-Fi adapter



The content of the e-paper display switches automatically depending on the camera status.





Also, each time EPAPER BTN is pressed, the display switches sequentially from HELP → WI-Fi → GO-Touch → HELP ... and so on.



Attention

When the camera is turned off, the display does not change even if EPAPER BTN is pressed.

External Appearance and Names of Each Part

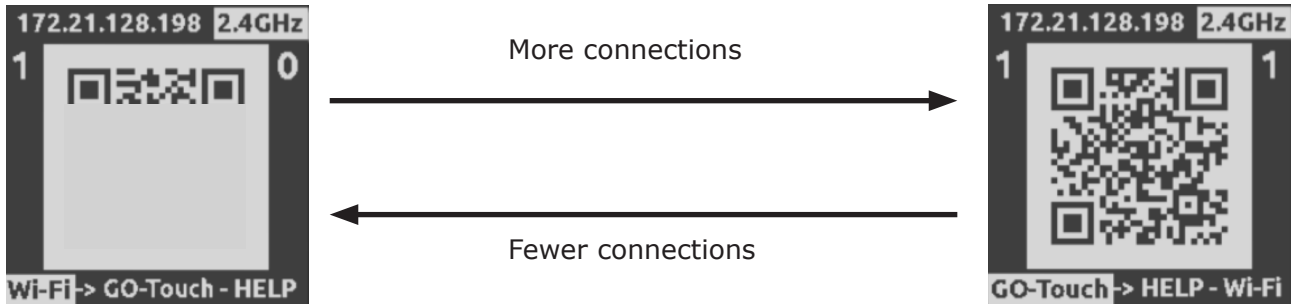
Display order	Display Contents	QR Code	Description.	Display Conditions
1	HELP		A link to the MEMRECAM GO product introduction page on our website will be displayed.	When the camera is turned off.
2	Wi-Fi		This display appears when the Wi-Fi adapter is not recognized.	When the camera has been successfully started up. If the Wi-Fi adapter is not recognized
			A link to connect to the camera via Wi-Fi will appear. Since the SSID and password are embedded in the QR code, simply read the QR code to connect to the camera. The figure on the left is a sample, so part of the code is hidden to prevent connection.	When a Wi-Fi adapter is connected and recognized When automatic transition is made from Display 3
3	GO-Touch		Address for starting GO-Touch. The address for starting GO-Touch is displayed. When the QR code is scanned, a web browser will be launched to access GO-Touch.	When automatically transitioning from Display 2

Automatic display 2 and display 3 transitions

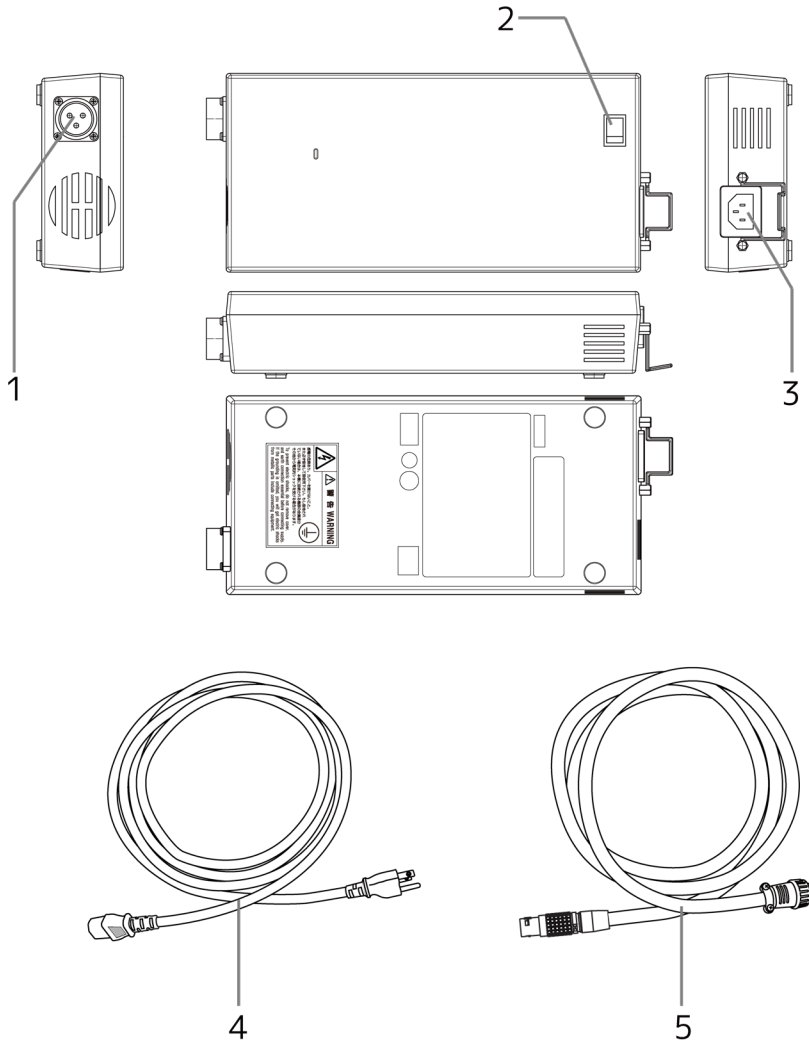
Display 2 and 3 will automatically switch according to changes in the number of terminals connected wirelessly to the camera connected to the Wi-Fi adapter.

When a terminal connects to the camera using the QR code in Display 2, the display switches to Display 3.

When the number of devices connected to the camera via Wi-Fi decreases, the display changes to 2.



AC POWER SYSTEM



1	DC connector
2	Power switch
3	AC connector

4	AC cable
5	DC cable

2

Camera Setup

Mount the Lens	22
Adjust the Lens Aperture	23
Connecting Ethernet cable	25
Until the power is turned on.....	27
Until the power is turned off.....	33
Restore the camera to factory settings	35
Connect Camera and tablet PC	37
Connect the tablet using a USB Wi-Fi adapter.....	44
Connect multiple cameras and tablets	45

Some of the images of GO-9/12 are used in the description.

Mount the Lens

The mounting adapter is screwed to the front panel of the camera with four screws.

F The Nikon F mount lens can be attached to the camera on the mount adapter.

Available F Mount Lens Types D Type, G Type

Mount the Lens

- (1) Remove the cap.
- (2) Attaching a lens to the camera.
- (3) Turn MF the lens focus mode. (Only lens with a selector switch)

(1)



(2)



Remove the camera mount cap lens and mount adapter. With a "click" sound in the direction of the arrow.

Turn until it locks.



- For details on handling the lens, refer to the lens's user's manual.
- F mounting does not support the auto focus function.

Removing the lens from the camera

- (1) Removing the lens from the camera.



Holding down the lens release button on the mount adapter in the direction of the arrow
Turn in the direction.



Be sure to attach the mount cap when no lens is attached to the camera. Inside the mount
Be careful not to get dirt or dirt on them.
With some lenses, vignetting may occur depending on the image resolution. (e.g. Nikon DX Nikkor Lens)



Adjust the Lens Aperture

How to adjust the aperture of F-mount lenses is explained. Even if the lens does not have an aperture ring, the aperture can be adjusted with the ring on the camera.

F mount adapter has a mount aperture ring.

Even if you attach a lens without an aperture ring, you can adjust the aperture using the mount aperture ring on the camera body.



Adjust the Aperture

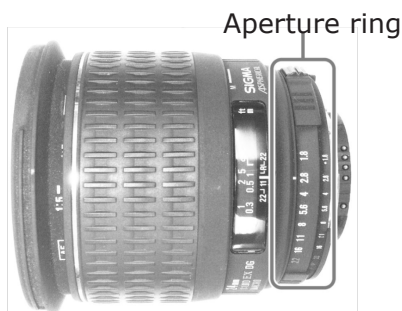
The method for adjusting the aperture differs on lenses without an aperture ring.

If the lens has an aperture ring

D Type lens

Adjust the aperture with the lens aperture ring

- Turn the mount aperture ring in the direction of CLOSE until it stops. This cancels the mount aperture ring function.
- Next, turn the aperture ring on the lens to adjust the aperture.



Example:

SIGMA ASPHERICAL 24mm 1:1.8D

EX DG MACRO



- If using a lens with an aperture ring and the mount aperture ring isn't turned in the CLOSE direction, stopping down will not occur properly even if the aperture is adjusted with the lens aperture ring.
- Make sure that the aperture ring is turned in CLOSE direction-until it stops.

If the lens does not have an aperture ring G Type lens

Adjust the aperture with the mount aperture ring

- Turn the mount aperture ring to adjust the aperture.



Turn in the direction of CLOSE to stop the aperture.

- The image will get darker
- The depth of field will get deeper (the range of focus will be wider)

Turn in the direction of OPEN to open the aperture.

- image will get brighter
- The depth of field will get shallower (the range of focus will be narrower)

Example:

Nikon ED AF-S NIKKOR 70-300mm 1:4.5-6.3G

Since the mount aperture ring indicator mark (●) is a target, adjust while checking the actual



- E type lenses that use an electro-magnetic aperture cannot be used with this camera.



Connecting Ethernet cable

GO-4K uses a simple J3 cable/J3 branch cable (optional) to connect Ethernet cables.

J3 Cable Type

The J3 cable is an optional cable common to MEMRECAM series.

J3 branch cable Ethernet cable connection connector and various input/output connectors

Connectors	
ETHER	
EST2	
IRIG-B	
TRIG2	
EPO	(GO-4K not supported)
PWRCNT	

Simple J3 cable Ethernet cable connector.

Connector	
ETHER	



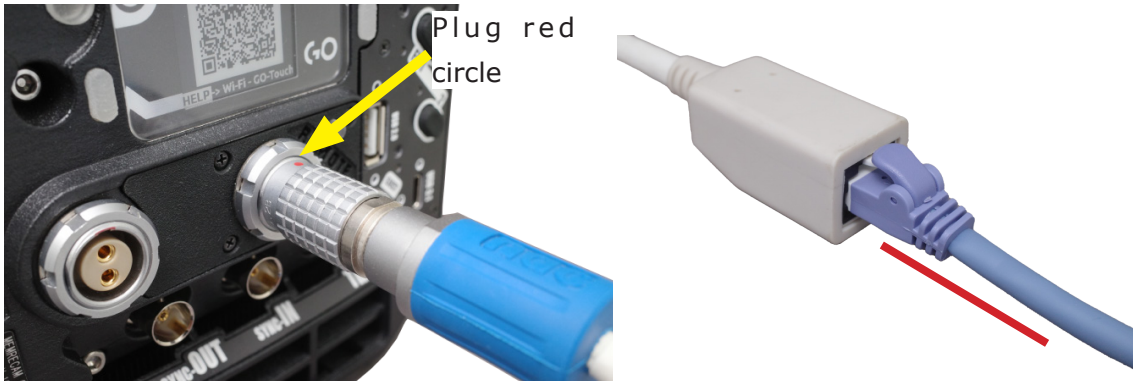
- GO-4K does not support EPO output from the REMOTE connector.
- Some MEMRECAM series models do not have a connector for the J3 cable.

Connect the cable

The connection method is the same for J3 branch cables and simple J3 cables.
The example is explained using a simple J3 cable.

(1) Connect simple J3 cable to REMOTE connector

(2) Connect Ethernet cable



Connect the cable plug so that the red circle on the cable plug is up. Insert the plug all the way to the back of the connector to lock it.

Connect the Ethernet cable to the J3 connector (RJ45).

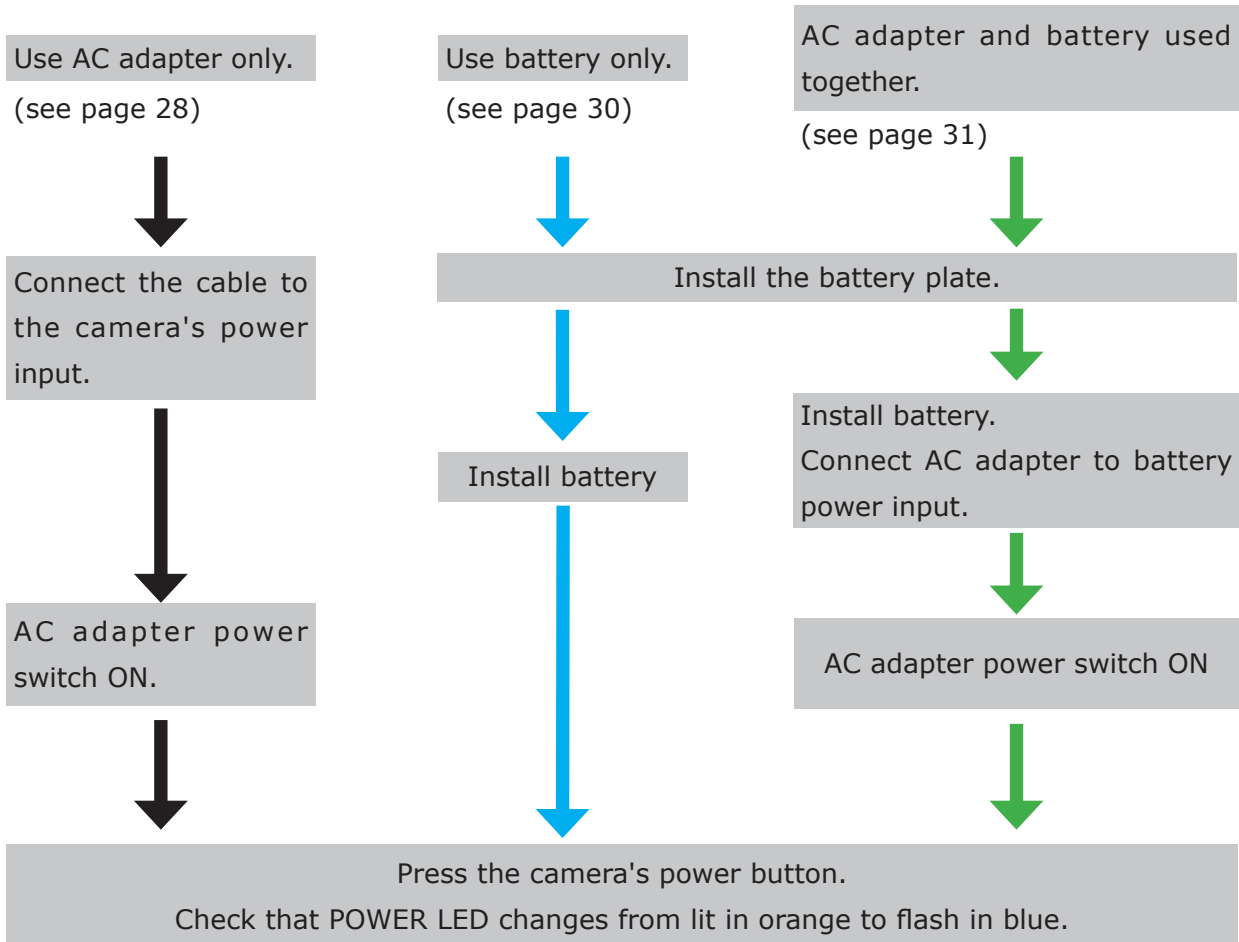


Attention

- The camera is designed for 1000BASE-T communication standards.
- Use an ethernet cable that is a category 5e (CAT 5e) or higher.

Until the power is turned on

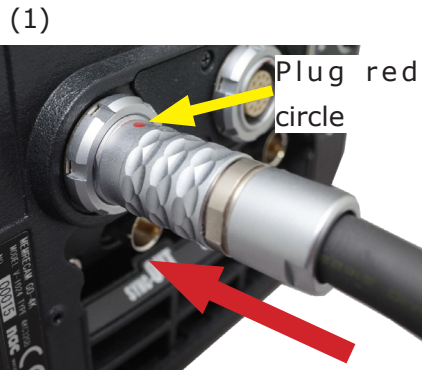
Connect the AC adapter or battery plate to the camera's power connector, depending on the power source to be connected



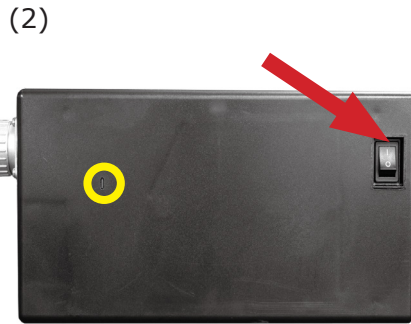
Until the power is turned on

Use AC adapter only.

- (1) Connect the DC cable of the AC adapter to the camera's power input
- (2) Turn on the power switch of the AC adapter
- (3) Press the power button on the camera



Connect the cable plug with the red circle facing up. Insert the plug all the way to the back until it locks into place.



The LED on the AC adapter lights up.



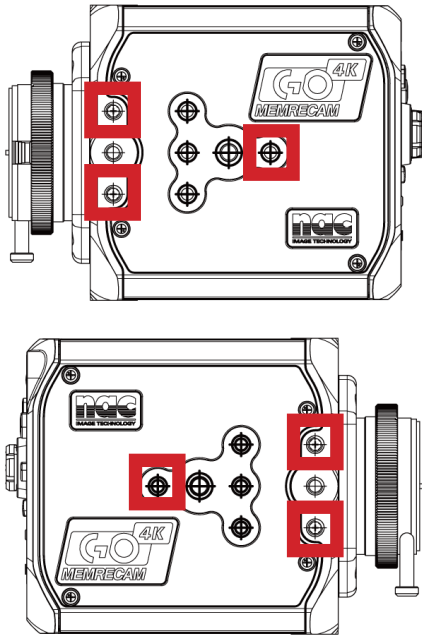
Make sure that POWER LED changes from lit in orange to flash in blue.

The power LED lights in white when startup is complete.

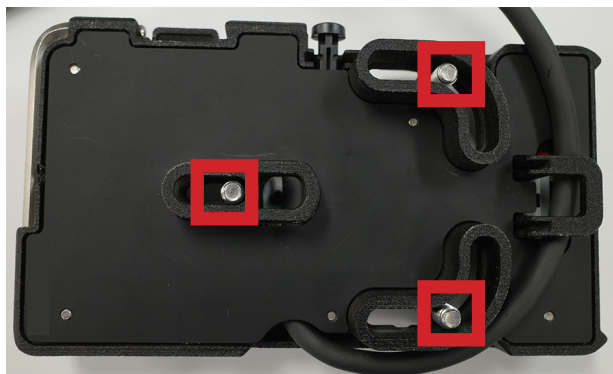
Install the battery plate.

- (1) Check the mounting screw holes on the camera.
- (2) Check that there are three screws on the battery plate.
- (3) Remove the wrench attached to the battery plate.
- (4) Screw in the battery plate.

(1)



(2)

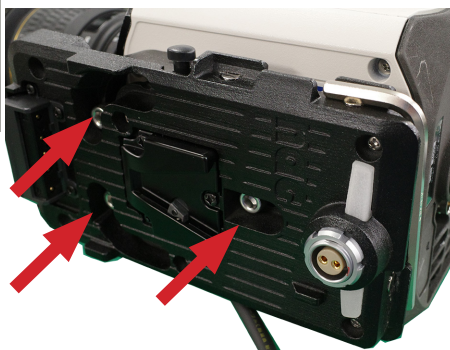


The position of the screw holes on the left and right sides of the camera.

(3)



(4)



Return the wrench to the battery plate.

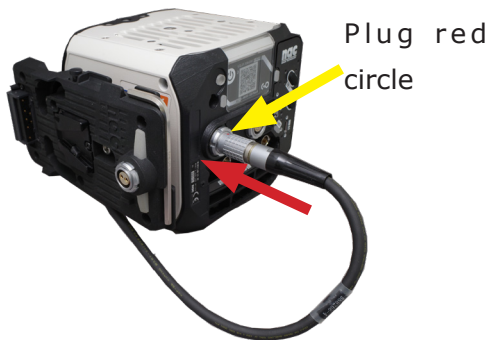
<Check the battery plate before connecting it to the camera.>

Do not connect the power cable to the camera's power input while the LED on the battery plate is lit.

Use battery only.

- (1) Install the battery plate. Connect the plate's power cable to the camera.
- (2) Install the battery.
- (3) Press the camera's power button

(1)



(2)



Connect the cable plug with the red circle facing up. Insert the plug all the way to the back until it locks into place. The LED on the battery plate lights up.

(3)



Make sure that POWER LED changes from lit in orange to flash in blue.

The power LED lights in white when startup is complete.

Battery plate LED	Battery		Powering the Camera	Battery replacement
	Connecting status	Remaining		
Not lit	Not connected	-	None	-
Yellow	Connecting	Can be used	Battery	Cannot replace
Red	Connecting	Pay attention to the remaining amount	Battery	Cannot replace

AC adapter and battery used together.

- (1) Install the battery plate. Connect the power cable of the plate to the camera.
- (2) Install the battery. Connect the DC cable of the AC adapter to the power input of the battery.
- (3) Attach the battery to the battery plate.
- (4) Turn on the power switch of the AC adapter.
- (5) Press the power button on the camera.

(1)



(2)



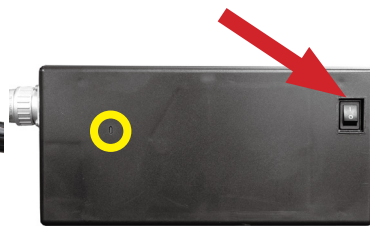
The LED on the battery plate lights up.

(3)



Connect the cable plug with the red circle facing up. Insert the plug all the way to the back until it locks into place.

(4)



The LED on the AC adapter lights up.

(5)



Make sure that POWER LED changes from lit in orange to flash in blue.

The power LED lights in white when start-up is complete.

Until the power is turned on

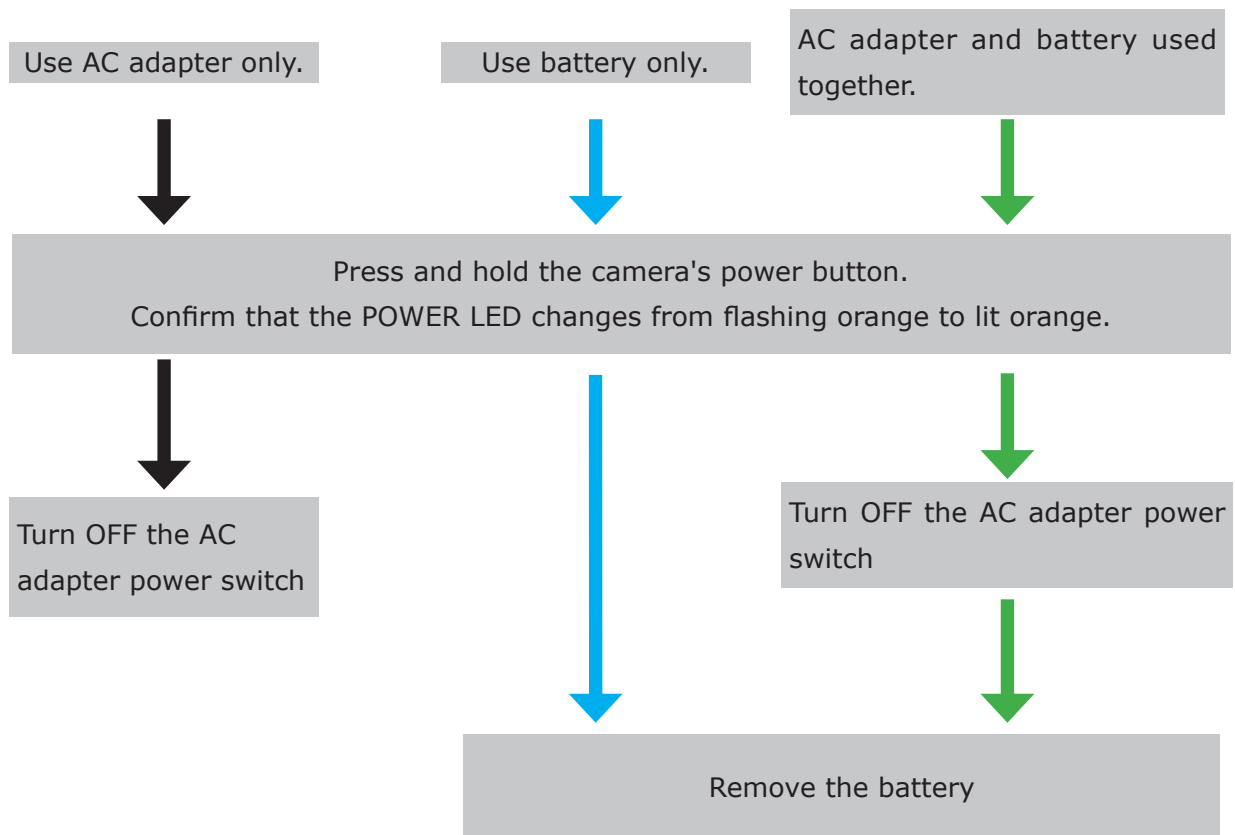
Battery plate LED	Battery		AC adapter	Powering the Camera	Battery replacement
	Connecting status	Remaining			
Not lit	Not connected	-	-	None	-
Yellow	Connecting	Can be used	Not connected	Battery	Cannot replace
Red	Connecting	Pay attention to the remaining amount	Not connected	Battery	Cannot replace
Purple	Connecting	Can be used	Connecting	AC adapter	Can be replaced
Blue	Not connected	Can be used	Connecting	AC adapter	Can be replaced
White	Connecting	Can be used	Connecting	AC adapter	Can be replaced



Until the power is turned off

<Check before turning off the power.>

Be sure to download all necessary data to USB media, PC, etc. before disconnecting the AC adapter or battery. The recorded data in the camera will be erased when the camera's power input is completely turned off.



Until the power is turned off

Press and hold the camera's power button.

To shut down the camera, press and hold the power button.



When shutdown is complete, the POWER LED changes from flashing orange to lit orange.

Turn OFF the AC adapter power switch.

Turn off the power switch on the AC adapter.



The LED on the AC adapter turns off.

Remove the battery

Remove the battery while pressing the battery release button on the battery plate.



Be sure to shut down the camera before disconnecting the external power supply.

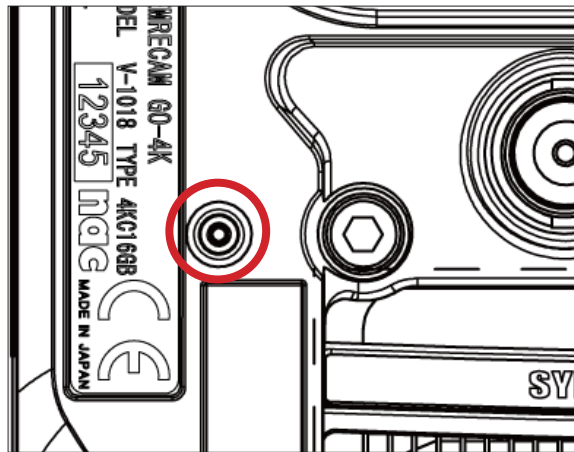
If the external power supply is disconnected before the shutdown is completed, the camera may start up with data recorded the next time the camera is started.

If this happens, press and hold the camera power button to shut down the camera again.

Restore the camera to factory settings

Restore the camera to factory settings

Press and hold the "RESET" button with a thin stick-like object.



Attention

There is a button inside the reset hole.

A thin object like an extended paper clip is best.

The settings you have changed (including LAN settings) and the recording data in the camera will be initialized.

Please reconfirm the camera settings.

Long press	<p>Factory Reset</p> <p>Resets all camera settings to factory defaults.</p> <p>Press and hold the "RESET" button until the POWER LED flashes green.</p> <p>Note that changed settings (including LAN settings) and recording data in the camera will also be initialized. Once the camera enters the initialization state, the power will turn off, so turn the power back on.</p>
------------	--

Short press "RESET" button. The camera will restart.

Short press	<p>Camera restart</p> <p>If the camera stops operating for some reason, it will restart.</p> <p>The recording data in the camera will remain.</p>
-------------	---

Short press

Press the RESET button once.

1	After pressing the RESET button, release it when the POWER LED lights yellow.
2	POWER LED Green light off (approx. 40 sec.) → white light off → white light on
3	The camera will reboot.

Long press

Press the RESET button for at least about 1.9 seconds.

1	POWER LED Yellow light on → Green blinking
2	Stop pressing the RESET button.
3	The camera shuts down. POWER LED lights up orange.
4	Reboot the camera.

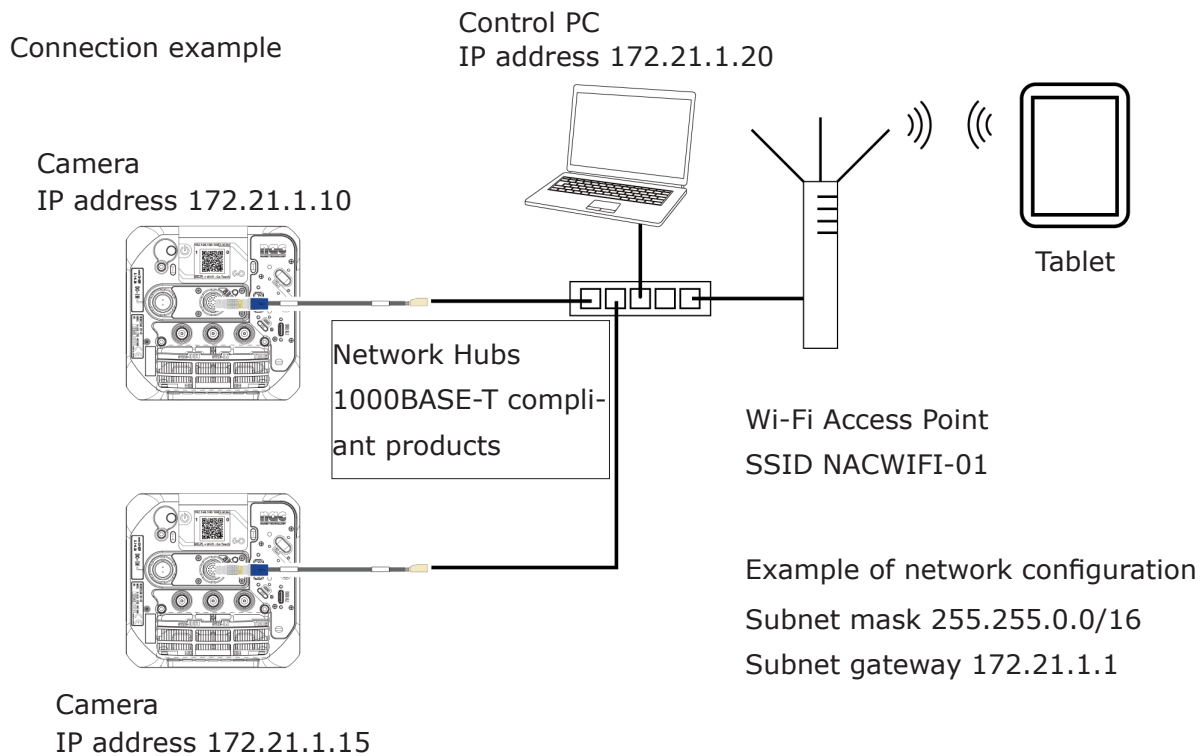


Connect Camera and tablet PC

Wi-Fi control of the camera with a tablet

The camera can be connected as shown in the connection example, and the tablet can be operated wirelessly.

In the example, the cameras connected to the network are connected through an access point.



Attention

This section lists the fictitious SSID and other information. Set according to the actual usage environment.

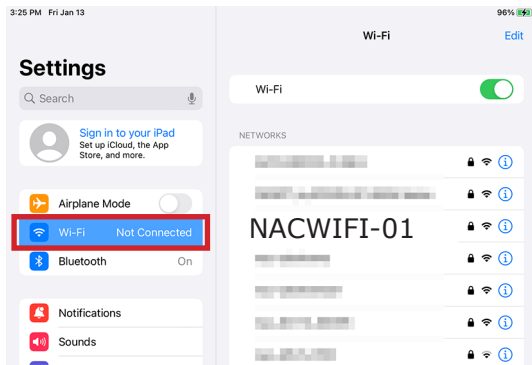
SSID may not be displayed on tablets depending on the access point settings.

Please refer to the instruction manual of the device for the access point settings, etc.

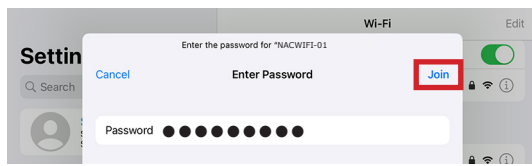
For network environment, the use of 1000BASE-T or higher compatible devices is recommended.

Connecting to an Access Point.

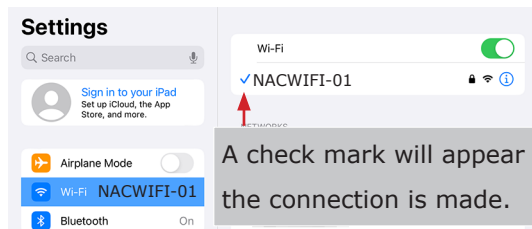
Setting example) For Apple iPad(iPad OS)



1) Select "Wi-Fi" from the "Settings" menu.
Tap the Wi-Fi access point "NACWIFI-01".



2) Enter the access point password and tap "Join".



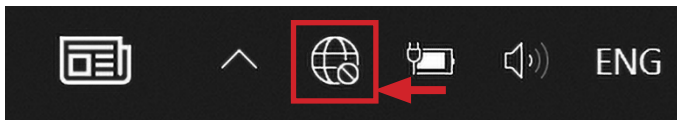
3) Make sure connection to the access point is established.



4) Enter the IP address of the camera to be connected to the browser.



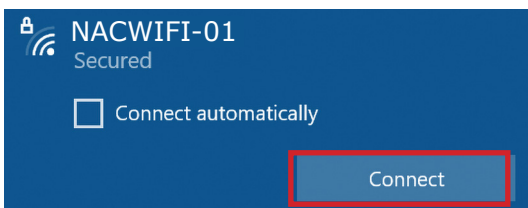
Setting example) For Windows



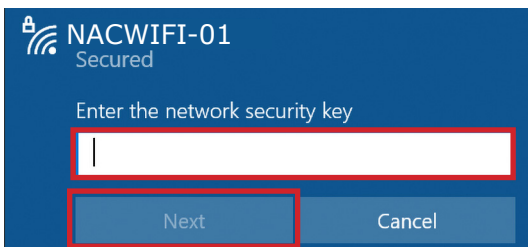
1) Select the Network icon in the notification area.



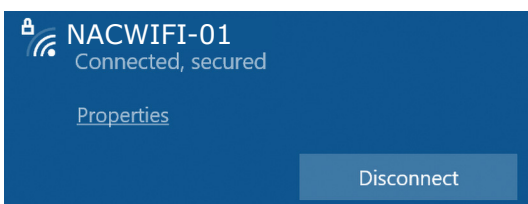
2) Make sure the Wi-Fi button is ON (colored) and select the SSID to be connected.



3) Confirm the SSID and select "Connect". Check "Connect automatically" and select "Connect" to automatically connect to the access point in the future.



4) Enter the password for the access point in "Enter the network security key" and click "Next".

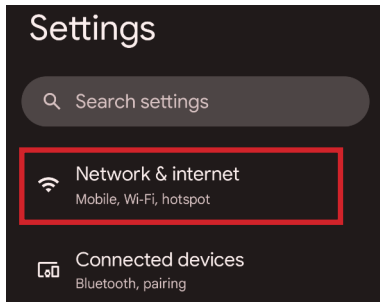


5) When the connection is completed, the message "Connected, Secured" is displayed and the connection is completed.

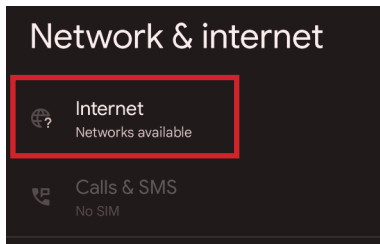


6) Enter the IP address of the camera to be connected to the browser.

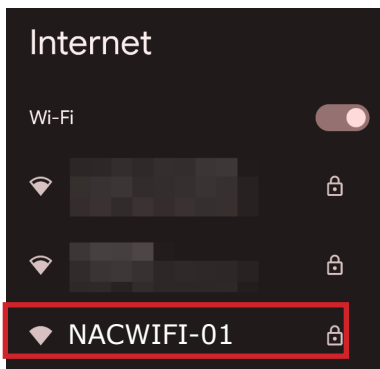
Setting example) For Android



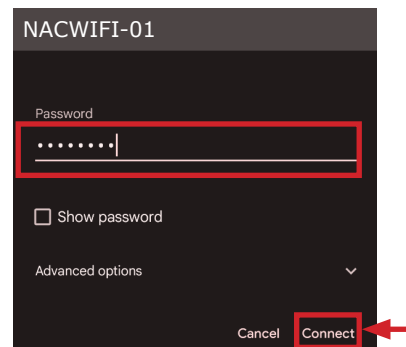
1) Select "Network & internet" from the "Settings" menu.



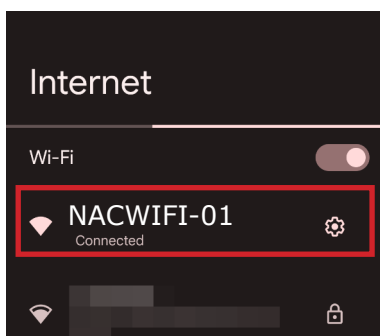
2) Select "Internet."



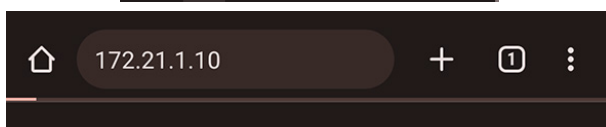
3) Select the SSID to connect to.



4) Enter the password for the access point in the "Password" field and select "Connect."



5) When the connection is complete, "Connected" is displayed.



6) Enter the IP address of the camera to connect to the browser.

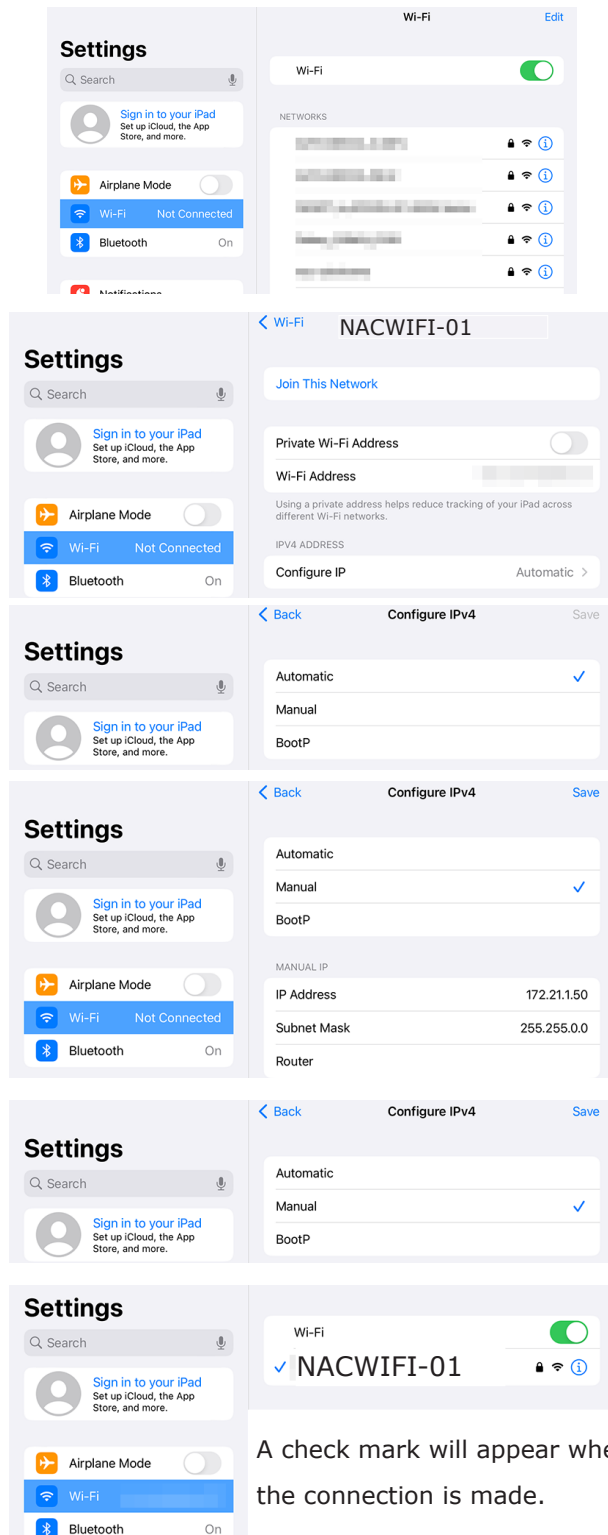


To manually change the tablet's IP address.

DHCP (automatic IP address assignment function) may not be available in some network environments. Change the tablet's IP address setting manually.

In the example, the IP address is set to "172.21.1.50".

Setting example) For Apple iPad(iPad OS)



1) Tap the symbol next to the name of the network SSID connecting under "Wi-Fi" in the "Settings" menu.

2) Tap "Configure IP".

3) Tap "Manual".

4) Enter the information in the "MANUAL IP" field.

In the example, each item is entered as follows

IP address 172.21.1.50

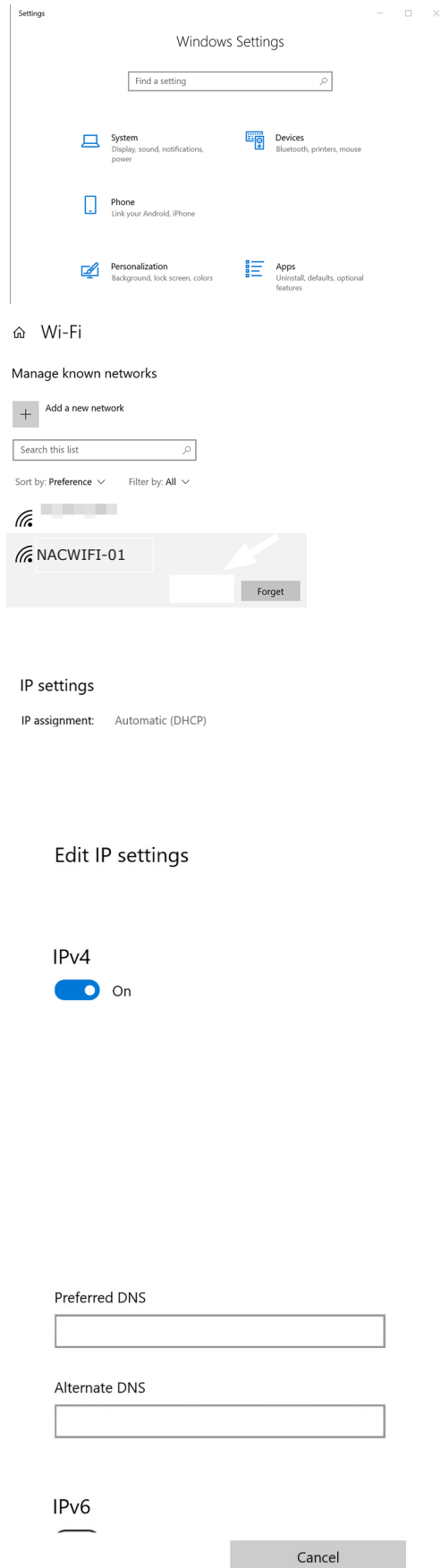
Subnet mask 255.255.0.0

5) Tap "Save" in the upper right corner.

6) Make sure connection to the access point is established.

A check mark will appear when the connection is made.

Setting example) For Windows

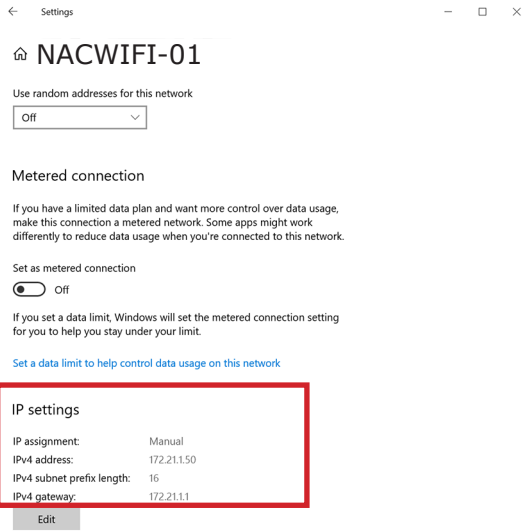


1) Select "Network and Internet" from the "Windows Settings" menu.

2) Select the SSID to be connected and select "Properties".

3) Select "Edit" for IP settings.

4) IP setting edition
Change to "Manual".
Set IPv4 to on.
The following contents are entered in each item. IP address 172.21.1.50
Subnet prefix length 16
Gateway 172.21.1.1
After completing the setting, select "Save".

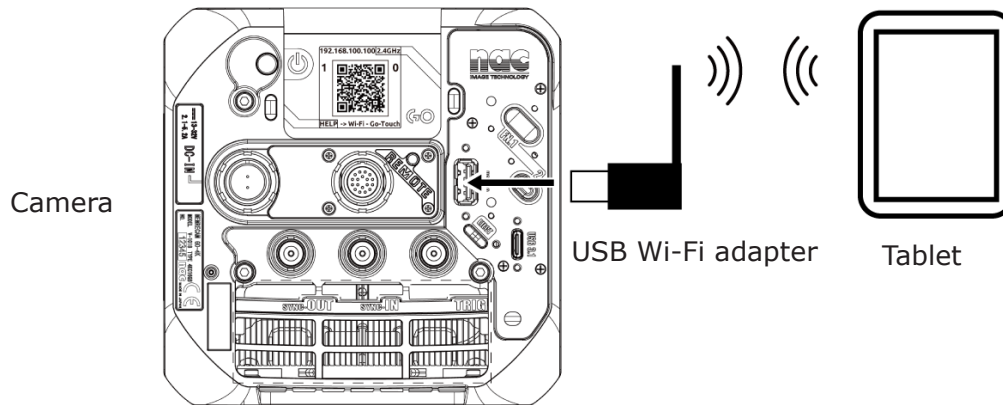


5) Verify the settings.

Connect the tablet using a USB Wi-Fi adapter

By connecting a USB Wi-Fi adapter, a Wi-Fi connection can be established without the need for a wireless router.

Connection example



Restrictions

- The USB Wi-Fi adapter must support access point mode.
- Only the 2.4 GHz frequency band of the USB Wi-Fi adapter can be used.

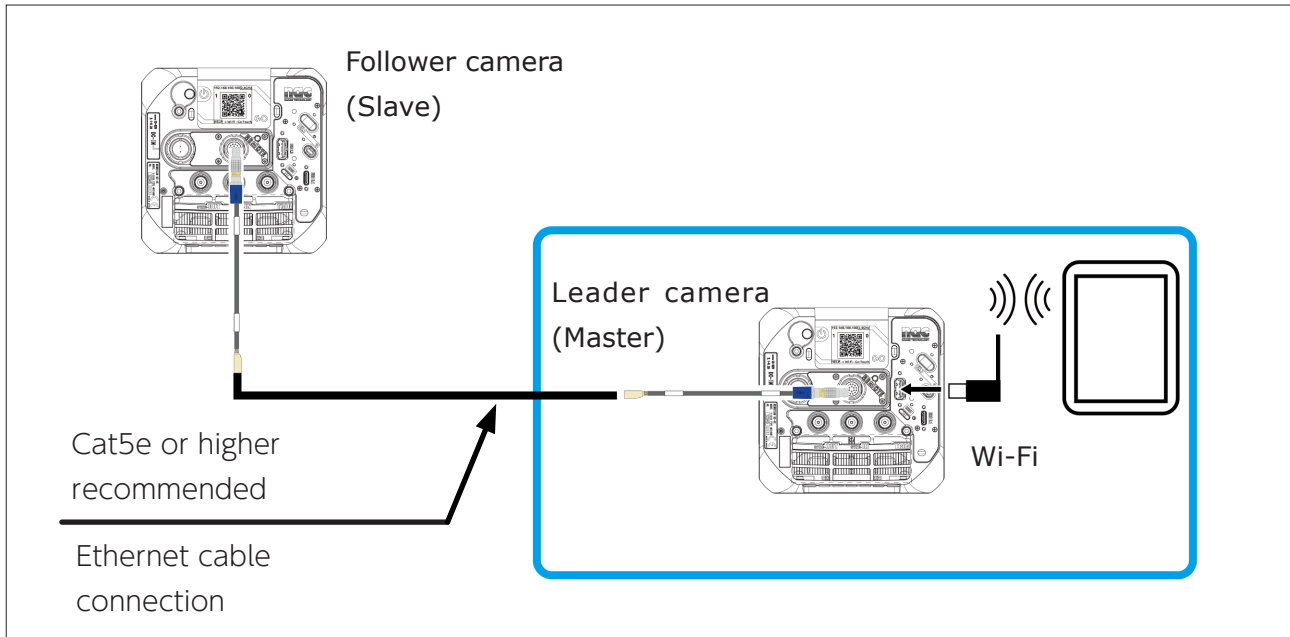


Attention For Wi-Fi adapters, please contact us or our distributors.



Connect multiple cameras and tablets

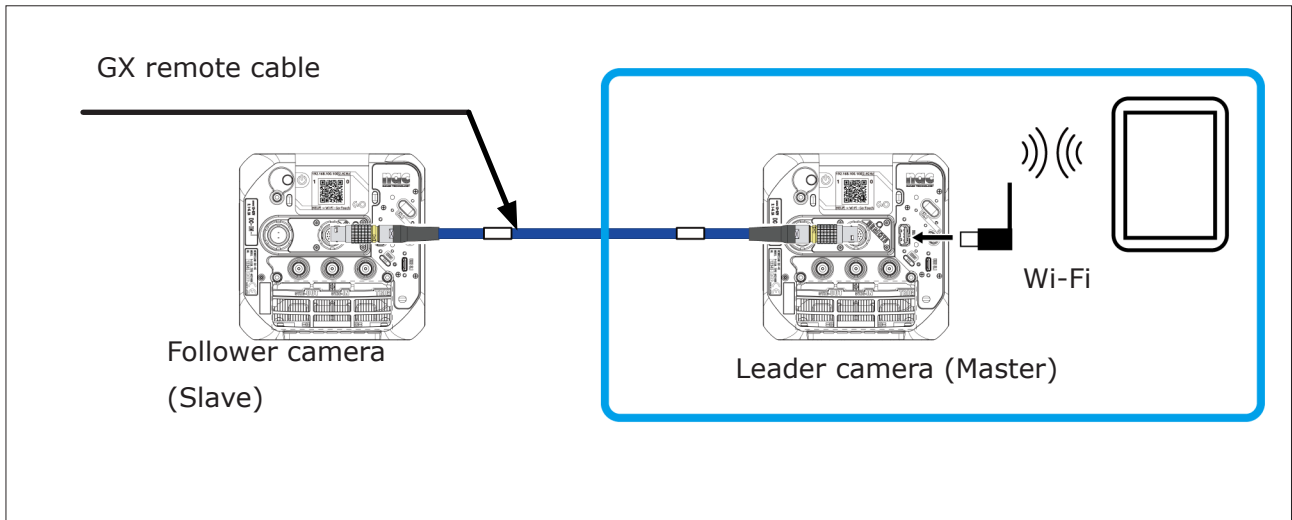
When connecting two cameras Connection example 1
Connecting with an Ethernet cable



- 1) Connect the two cameras directly with a LAN cable.
- 2) Connect the Leader camera to the tablet via Wi-Fi.

When connecting two cameras

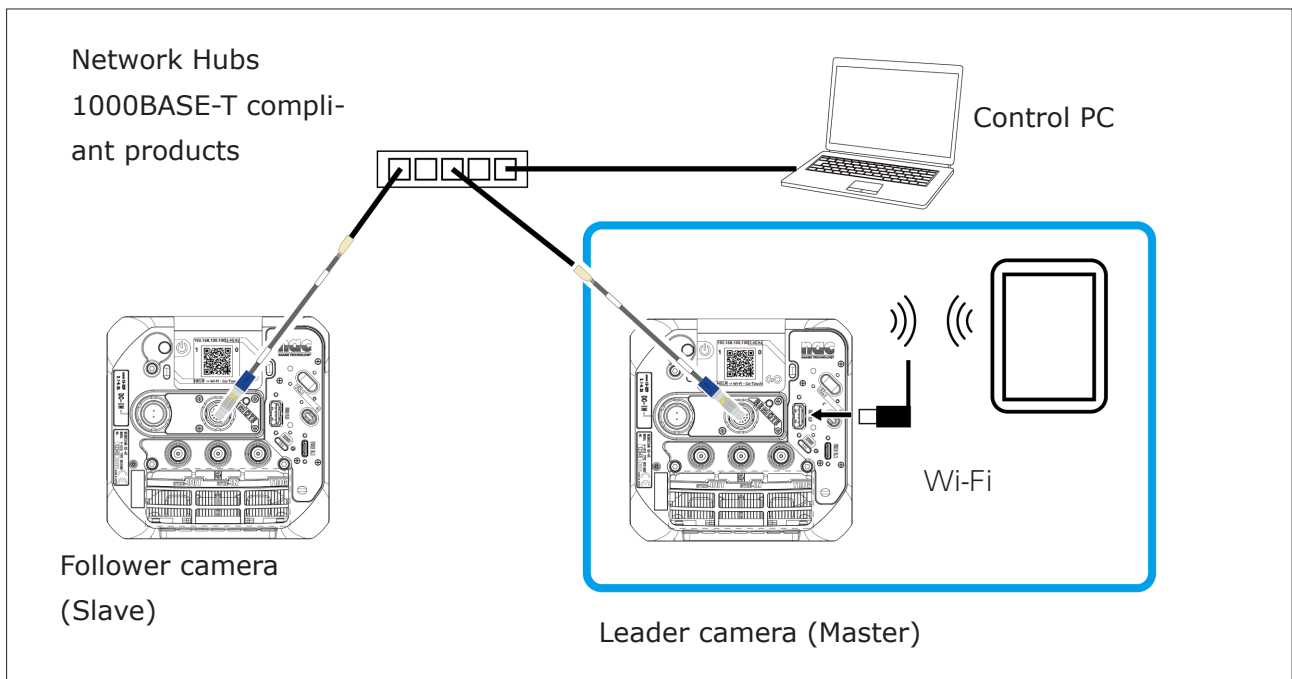
Connection example 2 Connect with GX remote cable



- 1) Connect the GX remote cable (plug type connectors on both sides) to the REMOTE connector on the camera.
- 2) Connect the Leader camera to the tablet via Wi-Fi.

When connecting two cameras

Connection example 3



- 1) Connect two cameras and a control PC to the hub for the network with LAN cables.
- 2) Connect the Leader camera to the tablet via Wi-Fi.

Control via MLink is possible by connecting a control PC to the hub for the network.

3

GO-Touch

About GO-Touch	48
GO-Touch Part Descriptions	49
INFO.....	57
Network Configuration.....	65
LIVE	75
PLAY	94
External USB Storage.....	116
Lighting device control function	123

Figures and explanations are mainly based on those of the same series product GO-12. Although the operation method is the same as that of GO-4K, some values that cannot be set in GO-4K may be included in the figures and explanations.

About GO-Touch

GO-Touch, a web application that can be used on PCs and various tablets, is included with the camera. The camera's angle of view, focus, brightness, etc. Can be adjusted right near the camera.

■ GO-Touch Features

Use with tablet devices

Control and live display of the camera is possible with a tablet device.

Browser Control

Operates on the tablet's standard web browser.

No application installation is required.

■ GO-Touch operating environment

nac checks the operation with the following tablet. (As of January 2024)

Type	Manufacturer and product name	OS	Web browser
Windows tablet	Microsoft Surface Pro 4	Windows 10 Pro (Version 22H2)	Microsoft Edge
Android tablet	Google Pixel 5	Android 13	Chrome
iOS tablet	Apple iPad Pro	iPadOS (Version 16.7)	Safari



Attention

- Even if it is described OS · browser, etc., It may not operate properly due to upgrading in the future etc. Please note.
 - GO-Touch cannot be used even if the camera is directly connected to an Android tablet or iOS tablet via wired LAN using a conversion adapter, etc.
- Use a Windows tablet for direct wired LAN connection between the camera and the tablet.

GO-Touch Part Descriptions

This section describes each part of GO-Touch.

MENU (main) screen

Close window. Select Selects an item on the MENU and displays it in the same window. Manual Display the manual in a new window

INFO

mac_GO-12_00004

Pin	Recover	DC-IN 24.3 V	Ready 0 / 2 shots	From Start 2.9 / 0.0 se

LIVE

Scene3(mac_GO-12_00004)

Pin	Black	Shot	Save	Remain	Download	Remain	Start
							-2993

PLAY

Scene1(mac GO-12 00004)

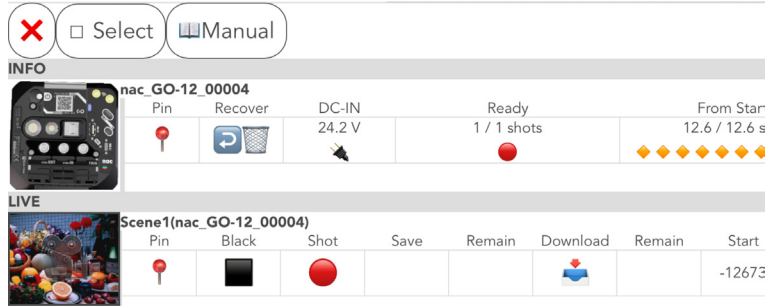
			0		0	0
--	--	--	---	--	---	---

Scene2(mac GO-12 00004)

			0		0	0
--	--	--	---	--	---	---

MENU Items	Function Description	Publication page
INFO	Configure camera settings.	(▶▶ 57)
LIVE	Configure settings for recording. Simplified analysis can be performed while viewing the video.	(▶▶ 75)
PLAY	Recorded video can be played back, analyzed easily, and saved to SSD or other devices. Video saved to SSD can also be played back.	(▶▶ 94)

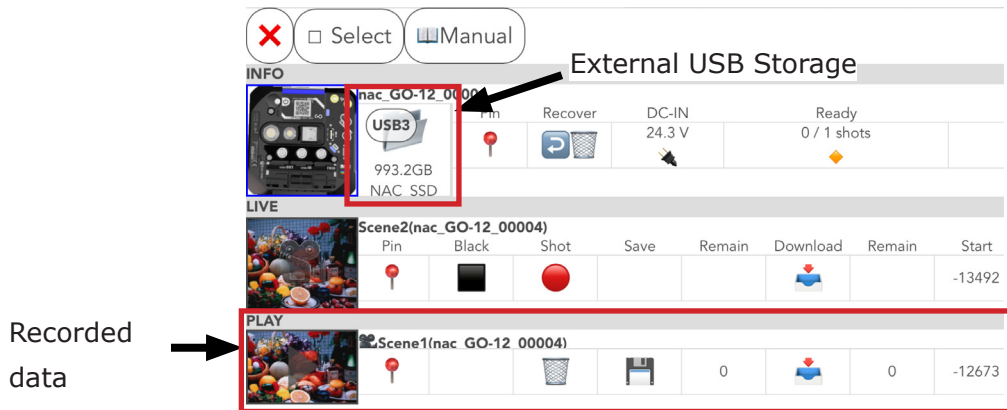
Example MENU display



MENU screen When there is no recorded data in the camera

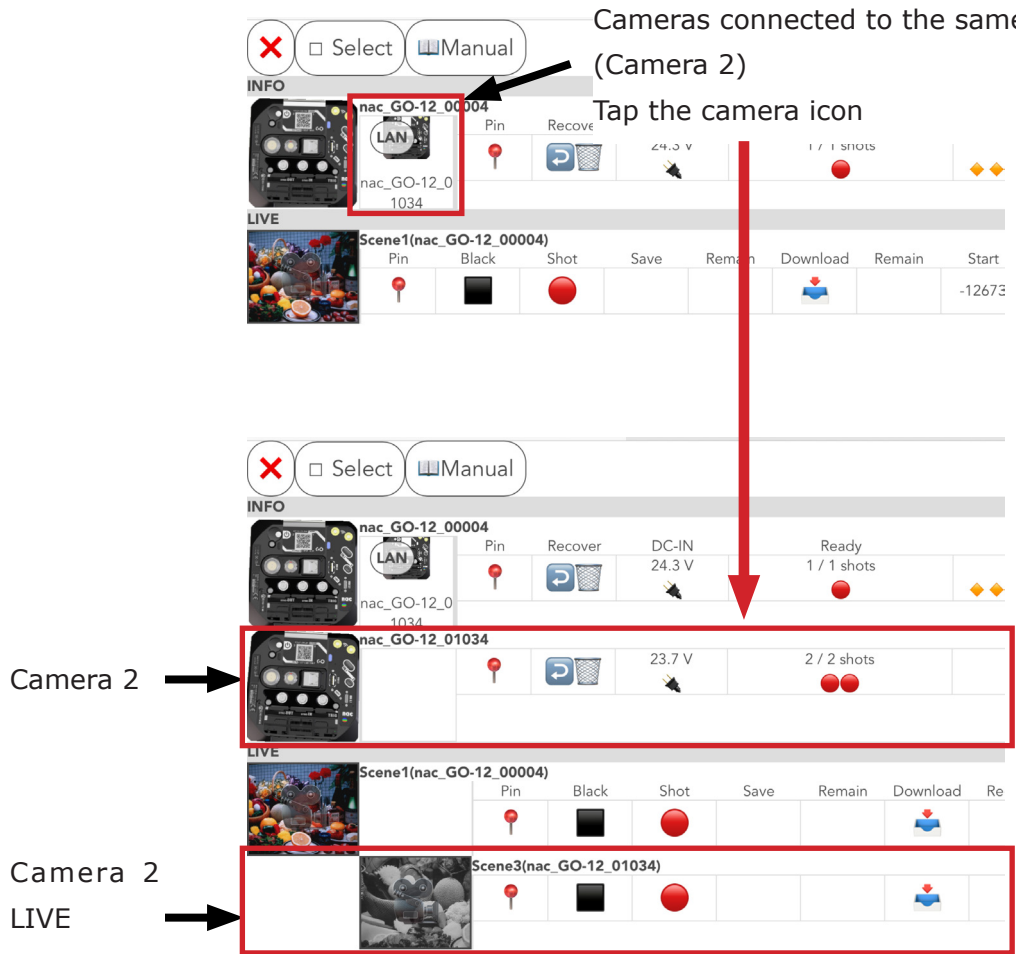


MENU screen When recording



MENU screen

If the camera has recorded data and an external USB storage device is connected to the camera.



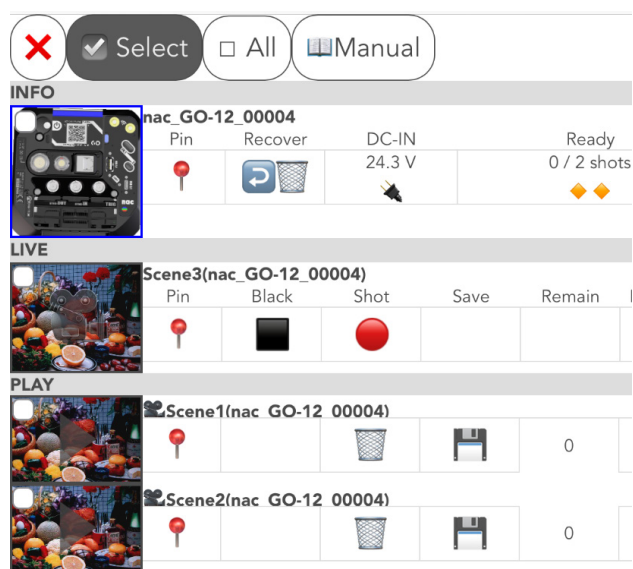
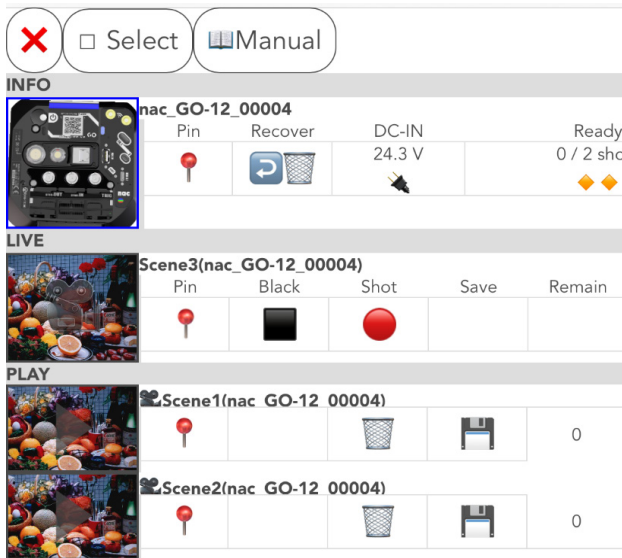
MENU screen If there are other cameras (GO cameras) on the same network

Select

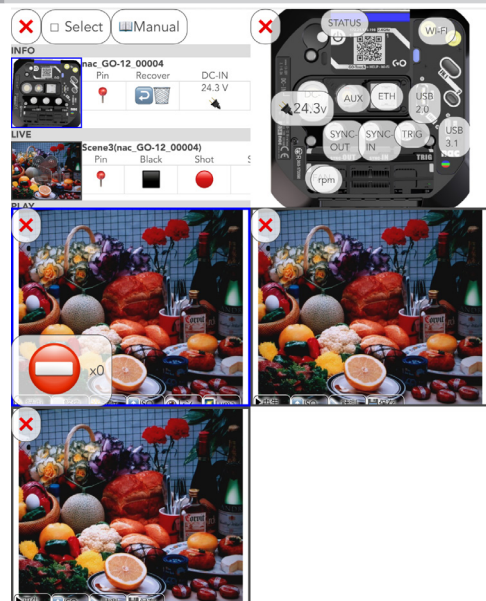
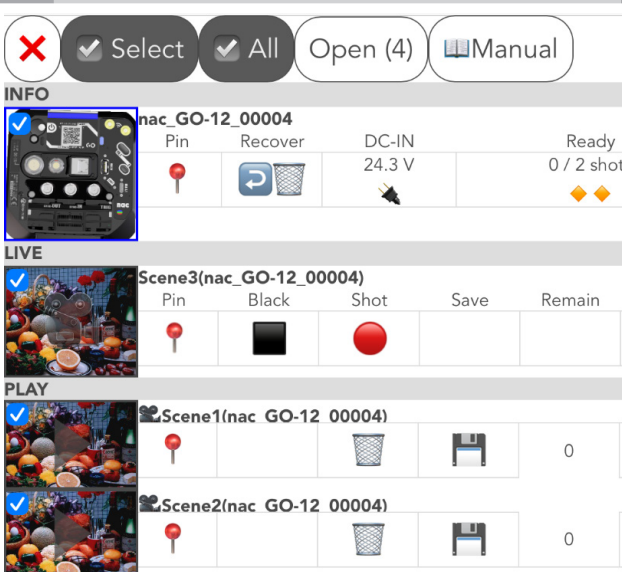
In addition to displaying the "INFO", "LIVE", and "PLAY" thumbnails individually by tapping them, it is also possible to display them as a batch or selectively.

In the example, [All] is displayed as a batch, and the number of thumbnails displayed can be adjusted by selecting them with the checkboxes at 2.

- | | |
|--|--|
| <p>1 The example is a camera that has finished recording after splitting the segment in two.</p> | <p>2 Tap [Select] to display a check box for selection for each thumbnail of "INFO", "LIVE", and "PLAY".</p> |
|--|--|



- | | |
|---|--|
| <p>3 Tap [All] to check all checkboxes.</p> | <p>4 Tap [Open (4)] will display the selected "INFO", "LIVE" and "PLAY" including "MENU" in the same window.</p> |
|---|--|

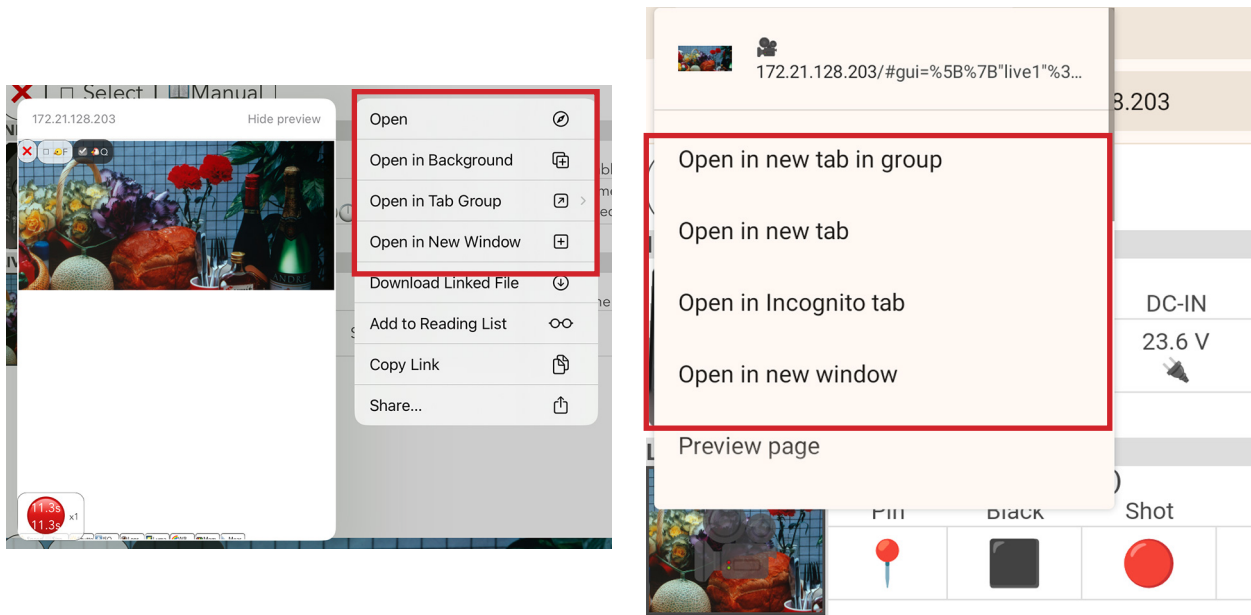




How can the browser be displayed in a separate tab or window?

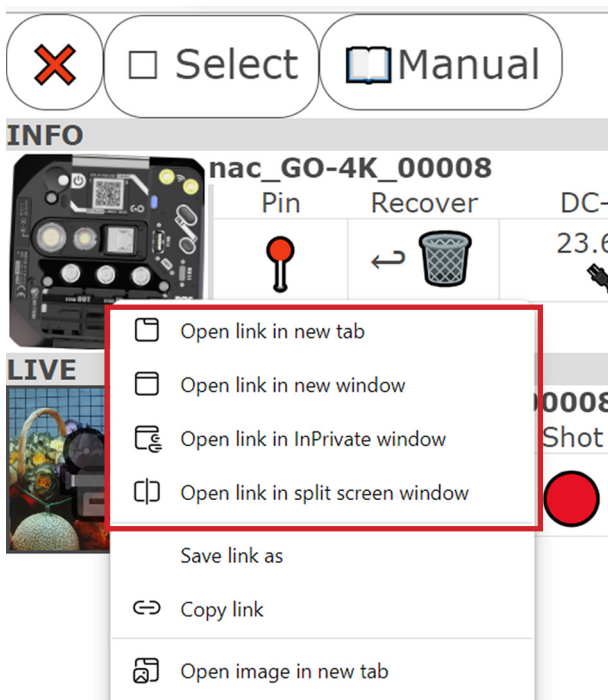
In the [Select] display, the individual thumbnails are displayed in the same window, so they will be smaller.

By long tapping the "INFO", "LIVE", and "PLAY" thumbnails, it is possible to display them in a separate tab or window. The items displayed by long tapping vary depending on the tablet, etc., used, so please refer to the respective manuals, etc.



Example on an iOS tablet.

Example on an Android tablet.

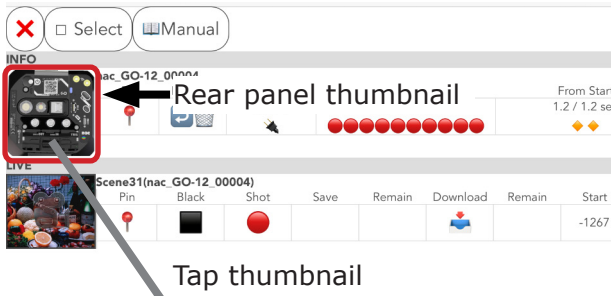


Attention The operation of OS, browsers, etc. may be subject to change due to future OS version upgrades, etc. Please be aware of this in advance.

Example on a Windows tablet.

GO-Touch Part Descriptions

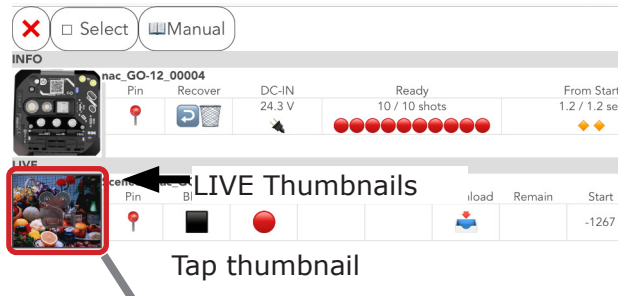
Tap the item thumbnail to display.



Tap thumbnail



Rear panel is displayed.



Tap thumbnail



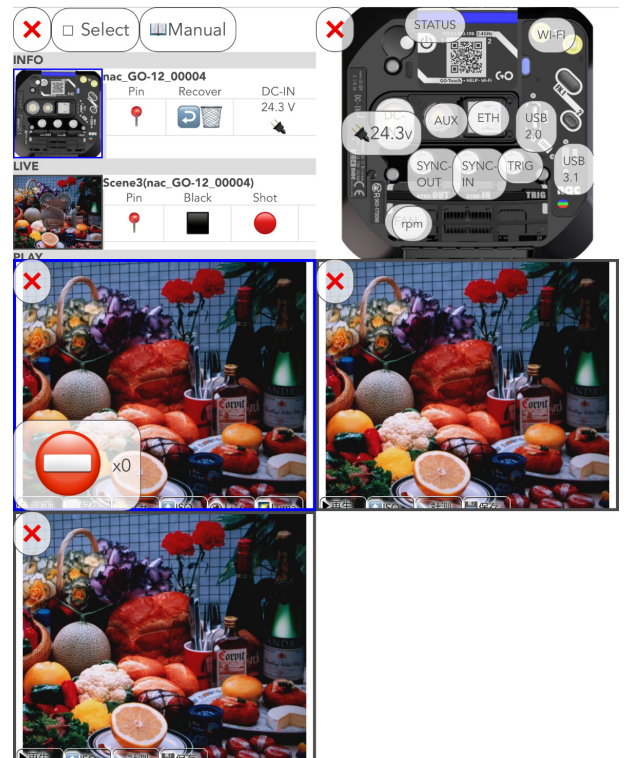
LIVE is displayed.



Tap thumbnail



PLAY is displayed.



Multiple simultaneous displays are also possible.



When multiple playback images are displayed, playback speed and other factors depend on the specifications of the PC or tablet and the transmission speed.

Pressing the thumbnail again with the item displayed once more closes the corresponding screen. Pressing the "❌" button closes the corresponding screen. Press "🗑️" next to a thumbnail of a playback image to delete the corresponding image. The border of the LIVE screen will show the same color as the camera's MODE_LED.

Rear panel thumbnail

It shows the same connectors and buttons as on the rear panel of the camera.



Pressing the FN.1/2 button activates the corresponding function "trigger issue/recording redo". Pressing the e-paper area switches the e-paper screen.

Pin Function

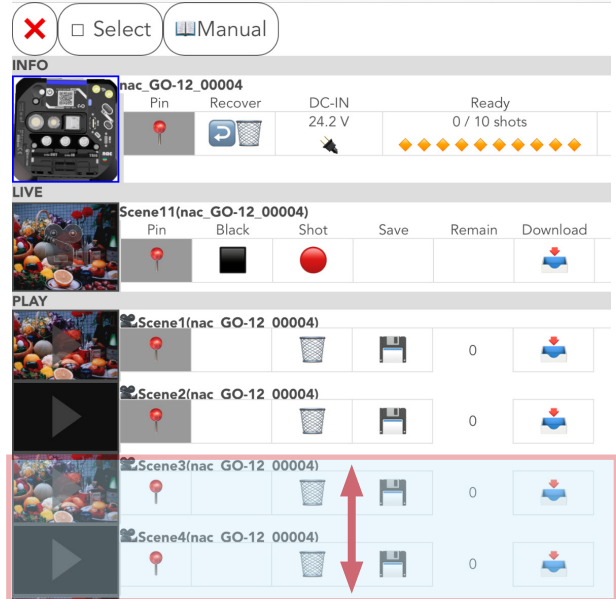
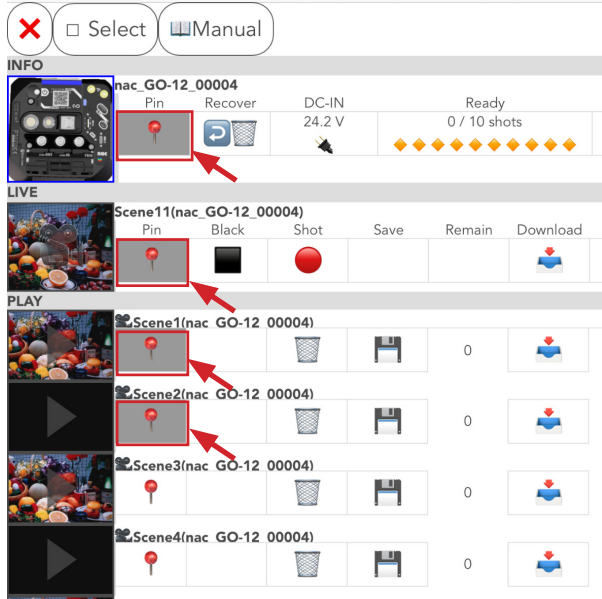
Use the Pin function when there are many display items on the screen and you want to fix the display by scrolling up and down.

1 Turn ON [Pin] of the item to be pinned on the display.

1 In the example, we turned ON [Pin] for INFO, LIVE, and PLAY (Scene 1 and Scene 2).

2 INFO, LIVE, and PLAY (Scene1 and Scene2) displays are now pinned.

2 It is subject to scrolling from Scene3 of PLAY.

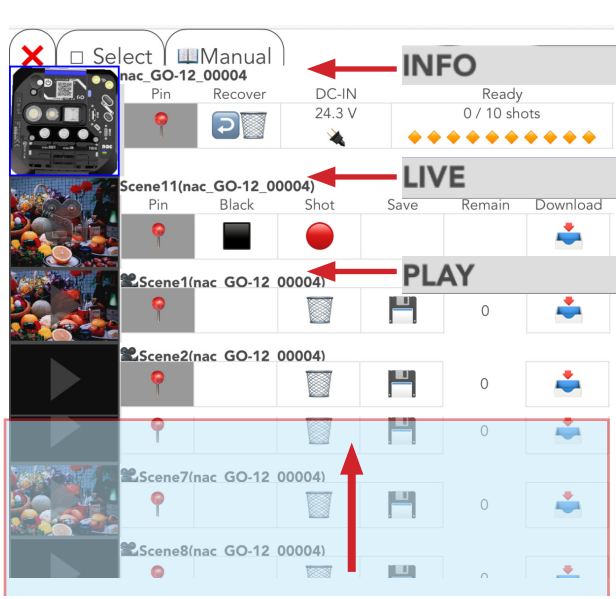
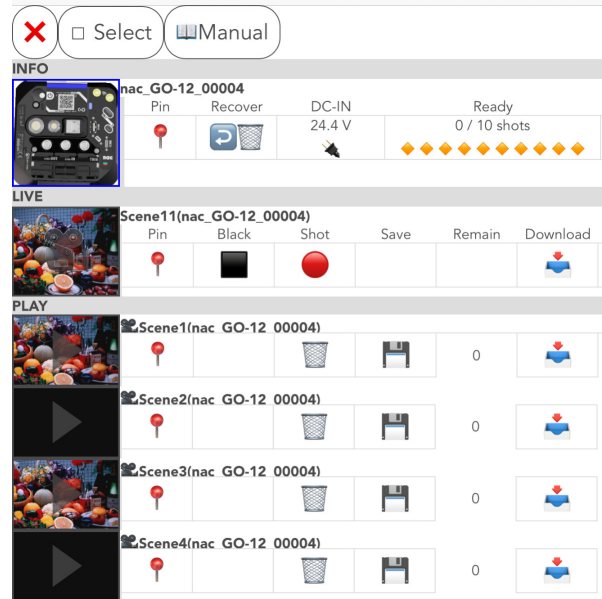


3 To release the pinning, set [Pin] to OFF.

3 To release the pinning, set [Pin] to OFF.

Due to specifications, bars displaying "INFO," "LIVE," and "PLAY" will disappear when scrolling up.

Due to specifications, bars displaying "INFO," "LIVE," and "PLAY" will disappear when scrolling up.




INFO

Set items related to the camera in the INFO menu.

Settings are displayed by scrolling horizontally on the MENU screen. The following figure shows a list of INFO settings.

INFO **nac_GO-4K_00008**



Pin	Recover	DC-IN 23.6 V	Ready 1 / 1 shots	From Start 11.3 / 11.3 sec	To Finish 11.3 / 11.3 sec
-----	---------	-----------------	----------------------	-------------------------------	------------------------------

Recordable	Memory	Allocation Type	Trigger Position	Recorded	SYNC-OUT	(Pol)	V-OUT (Delay)	Actual	Multiply	Freq
2268 frames 22.68 sec	34.1 GB	1shots	50%	0 shots	IRIG-OUT					










T-OUT (Tim	Delay	Actual))	SYNC-IN	(Pol)	Filter)	TRIG-IN	(Pol)	Filter)	IRIG-B	EST2	(Pol)	Filter)	Logic)
			Time			Trigger	H-L	200 us	Time	Auto	H-L	0 us	

TRIG2	(Pol)	Filter)	Logic)	ExpTiming	Fan	(Actual)	Speed	Stop)	Temp (Sensor	Black	Remain)	MechShutter	Phase
Trigger	L-H	200 us	1 OR 2	Start	1%	27%	2129 rpm	12.2	55.6 °C	53.2 °C	27.2	Opened	0°


LED	Button (FN.1	FN.2	FN.3	FN.4	EJECT)	IO-BOX	Camera	Time	Sensor	Memory	Model	S/N
Mid	H	H	H (ON)	H	H	GX-HUB	nac_GO-4K_00008	2023/12/12 14:20:23	Color	32 G	GO-4K	00008

Version	Software	Hardware	Ether (IP	Address	Mask)	Wi-Fi (SSID
0.8.5	20231004180308	07-05-A0B2-8805-1003-0253	Manual	172.21.128.203	255.255.0.0	nac_GO-4K_00008

Passphrase	Domain	Band	2.4GHz	5GHz	Stealth	Clients)
memrecam	gt.nac	2.4GHz	Ch 1		Off	20

<p>Pin</p>	<p>Ensure that the INFO menu is always visible in the screen. Tap to toggle ON/OFF. (▶▶ 56)</p>	
		<p>OFF</p>
		<p>ON</p>
<p>Recover</p>		<p>Attempts to restore the images of deleted files. Images whose memory has been overwritten cannot be restored.</p>
<p>DC-IN</p>	<p>Displays the input voltage to the camera and the power source being used</p>	
		<p>Power input to camera via AC adapter</p>
		<p>High</p> <p>↑</p> <p>Battery level</p> <p>↓</p> <p>Low</p>
		<p>Replace the battery or connect the AC adapter.</p>
<p>Ready</p>	<p>The number of times remaining that can be triggered and recorded. Total, up to 10 is displayed.</p>	
		<p>Number of consecutive recordings</p>
		<p>Number of times it can be recorded after waiting</p>
		<p>Number of times recorded</p>
<p>From Start</p>	<p>This is the number of seconds recorded as the video before the trigger input. No video will be recorded before this time. Each "🕒" icon indicates one second, up to a maximum of 10 seconds.</p>	
<p>To Finish</p>	<p>The number of seconds the video will be recorded after the trigger input. No video will be recorded before this time after the trigger input. Each "🕒" icon is one second, and up to 10 seconds can be displayed.</p>	
<p>Recordable</p>	<p>Number of frames and time (in seconds) that can be recorded</p>	
<p>Memory</p>	<p>Maximum memory capacity for recording</p>	



Allocation Type	Setting the recording memory division If the value "0" is entered, no recording will be made.	
	shots	Number of shots
	GB	Memory sizes
	sec	Recording Time
	frame	Frames
Trigger Position	Trigger position setting If a range that cannot be set is entered, recording will not be possible.	
	%	Numerical input. Numerical values can be entered up to one decimal place. Any digits below that will be rounded to the nearest whole number.
	sec (-)	Specifies the number of seconds before the trigger input.
	sec (+)	Specifies the number of seconds after the trigger input.
	frames (-)	Specifies the number of frames before the trigger input.
	frames (+)	Specifies the number of frames after the trigger input.
Recorded	Number of shots recorded in the unit's memory One shot per  icon, up to a maximum of 10 shots can be displayed.	
SYNC-OUT	SYNC-OUT connector output setting	
	EPO	Outputs exposure pulses (EPO) according to the camera exposure.
	VD-OUT	Signal output for the camera's internal synchronization signal.
	IRIG-OUT	Outputs time synchronous signal
	TRIG-OUT	Output trigger signal
(Pol	Signal setting when SYNC-OUT output is set to EPO.	
	L	Outputs a "L" level signal during exposure.
	H	Outputs a "H" level signal during exposure.
V-OUT (Delay	Numeric entry	Sets the delay time for output timing relative to the camera's internal sync signal. (Setting in μs)
Actual	Actual delay time (μs)	
Multiply	Numeric entry	Sets the frequency divider or multiplier for the camera's internal sync signal (frame rate).
Freq)	Displays the frequency of the output (Hz)	

T-OUT (Tim	Trigger timing setting when SYNC-OUT output is set to TRIG-OUT.		
	Center	Trigger signal is output at the center timing of the next frame.	
	Through	Outputs the trigger input signal as it is.	
	Delay	Trigger signal is output at the timing of the delay time setting from the start of the next frame.	
Delay	Numeric entry	Sets the delay time between the start of the next frame and the output of the trigger signal. (Setting in μs)	
Actual))	Actual delay time (μs)		
SYNC-IN	Selection of connector applications.		
	None	Signal input is not used. * When both SYNC-IN and EST2 are set to None, the settings are switched to the internal time and internal synchronization settings.	
	Auto	When EST signal is input	EST synchronization
		When no signal is input	Can operate without synchronization
	EST	When EST signal is input	EST synchronization
		When no signal is input	Operation stopped (waiting for signal)
	Time	When IRIG signal is input	IRIG synchronization
		When no signal is input	Can operate without synchronization
(Pol	Signal setting when SYNC-IN is set to EST		
	H-L	Exposure starts at H to L transition.	
	L-H	Exposure starts at L to H transition.	
Filter)	Numeric entry	Filter setting for high external noise. (Setting in μs) Applicable to EST signals only.	
TRIG-IN	Selection of external trigger signal.		
	None	Signal input not used.	
	Trigger	Used as trigger signal input	

(Pol	Polarity setting			
	H-L	Trigger signal detected at "L" level		
	L-H	Trigger signal detected at "H" level		
Filter)	Numeric entry	Filter setting for high external noise. (Setting in μs)		
EST2	Synchronous selection by EST2 signal			
	None	It is possible to operate without synchronization regardless of the signal input. *When both SYNC-IN and EST2 are set to "None", the setting is switched to internal time and internal synchronization.		
	Auto	When EST signal is input	EST synchronization	
		When no signal is input	Can operate without synchronization	
	EST	When EST signal is input	EST synchronization	
		When no signal is input	Operation stopped (waiting for signal)	
(Pol	Signal setting for EST2			
	H-L	Exposure starts at H to L transition.		
	L-H	Exposure starts at L to H transition		
Filter	Numeric entry	Filter setting for high external noise. (Setting in μs)		
Logic)	EST signal selection			
	1 OR 2	The first external signal received from either EST1 or EST2 connector is valid		
	1 AND 2	Valid when external signals are received from both EST1 and EST2 connectors simultaneously		
ExpTiming	Exposure timing setting for reference signal of recorded frame			
	Start	Start point		
	End	End point		

Fan	Camera fan speed setting	
	Numerical input (%)	100%: Maximum speed 1%: Silence 0%: Fan stopped
(Actual Speed	Fan rotation state (varies with internal temperature) (unit %)	
Stop)	Fan speed (unit rpm)	
Temp (Sensor	Indicates the graceful temperature at which the fan can be operated with the fan stopped (unit: degree)	
Black	Image sensor temperature (unit :°C)	
Remain)	Image sensor temperature at black balance update (unit: °C)	
MechShutter	Indicates the time interval until thermal shutdown (in seconds).	
Phase	Operation state of mechanical shutter at black balance update (Beginning of close → end of close → beginning of open → end of open)	
LED	Phase shift setting of exposure timing relative to one frame rate cycle (setting unit °)	
	CAMERA MODE LED and POWER LED settings.	
	Off	CAMERA MODE LED and POWER LED are turned off.
	Low	Dim the CAMERA MODE LED and POWER LED.
	Mid	CAMERA MODE LED and POWER LED as standard.
	High	Brighten CAMERA MODE LED and POWER LED.
Button (FN.1	Extra1	Same settings as Mid
	H	Button not pressed.
FN.2	L	Button is pressed.
	H	Button not pressed.
FN.3 (Wi-Fi BTN)	L	Button is pressed.
	H (ON)	H (not pressed)/L (pressed), and Wi-Fi function ON (enabled)/OFF (disabled)
L (OFF)		
FN.4 (e-paper)	H	Button not pressed.
	L	Button is pressed.
EJECT)	H	Button not pressed.
	L	Button is pressed.
IO-BOX	In GO-4K, it is labeled GX-HUB.	

Camera	Camera information Change is linked to LIVE "NAME". (Default setting: nac_GO-Camera type_CID) To return to the initial state, delete the entered characters and leave blank.	
Time	Display of current time	
Sensor	Color/Mono	Displays whether the image sensor is color or monochrome.
Memory	Memory in the camera	
Model	Camera type (GO-4K/GO-9/GO-12)	
S/N	Camera Serial Number.	
Version	Camera firmware version.	
Software	Firmware Information	
Hardware	Camera Hardware Information	
Ether (IP)	How to set the IP address in the camera's wired LAN.	
	Manual	Manually set IP address. How do make changes?(▶▶ 65)
	Auto	An IP address is automatically assigned by the DHCP function.
Address	IP address of the camera's wired LAN	How do make changes?(▶▶ 65)
Mask)	Subnet mask of the camera's wired LAN	How do make changes?(▶▶ 65)
Wi-Fi (SSID)	SSID of the camera's wireless LAN (Default setting: nac_GO-Camera type_CID) Only one-byte alphanumeric characters can be set.	How do make changes?(▶▶ 65)
Passphrase	Change the password for wireless LAN connection (Default setting: memrecam) Only one-byte alphanumeric characters can be used. Please set at least 8 characters.	How do make changes?(▶▶ 65)
Domain	Network domain of the camera available after the wireless LAN connection (usually gt.nac)	
Band	Wireless LAN adapter frequency band setting (fixed at 2.4 GHz)	

2.4GHz	<p>2.4 GHz channel.</p> <p>Changing channels may improve Wi-Fi connectivity in environments with radio interference or poor wireless conditions.</p> <p>Can be set from Ch 1 to Ch 11.</p>	<p>How do make changes? (▶▶ 65)</p>
5GHz	<p>Not used.</p>	
Stealth	<p>Turn ON/OFF the function to disable notification of the wireless LAN SSID to tablets and other devices.</p>	<p>How do make changes? (▶▶ 65)</p>
Clients)	<p>Sets the number of tablets and other devices that can be connected simultaneously via wireless LAN. (Default setting: 20)</p>	

Network Configuration

The camera's network settings can be configured and changed in the INFO menu. Wired LAN settings can also be configured using the tools included with MLink.

The network settings can be changed using the GO-Touch or the "Camera System Settings 64 (HXUtility)" in the bundled tools of the MLink.

LAN	Setting items	GO-Touch	MLink (HXUtility)
Wired LAN	DHCP function IP address Subnet mask	OK	OK
Wireless LAN	Password Channels Stealth Clients	OK	NG



Check before changing the DHCP function.

When using the DHCP function, the camera will automatically obtain an IP address from a DHCP server in the connected network. If there is no DHCP server and the setting is changed to Auto, the camera will behave as follows.

It takes time until the camera is ready for use. (Example of our test)

Connected to a wired LAN network: approx. 17 min.

When not connected to a wired LAN network: approx. 7 min.

The camera cannot be used in a wired LAN network because it cannot obtain the IP address and subnet mask information of the wired LAN network.

IP address setting for wired LAN

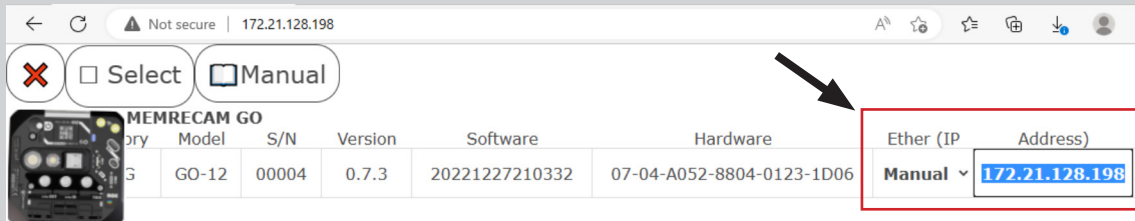
Please change the wired LAN settings when necessary depending on usage environment.

How to set up

Make sure Ether IP is set to "Manual".

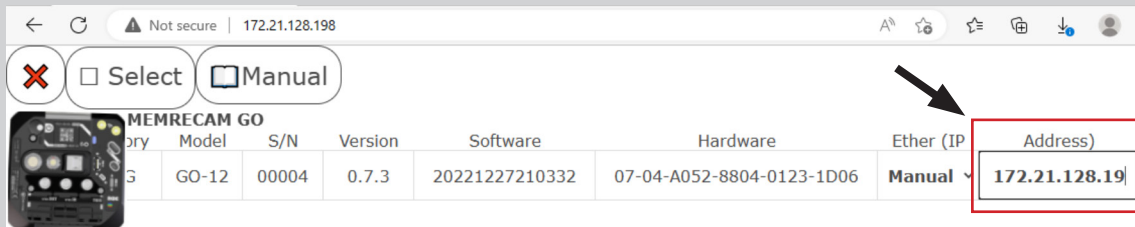
Tap Address to enter.

1)



Enter the IP address. In the example, "172.21.128.19" is entered.

2)

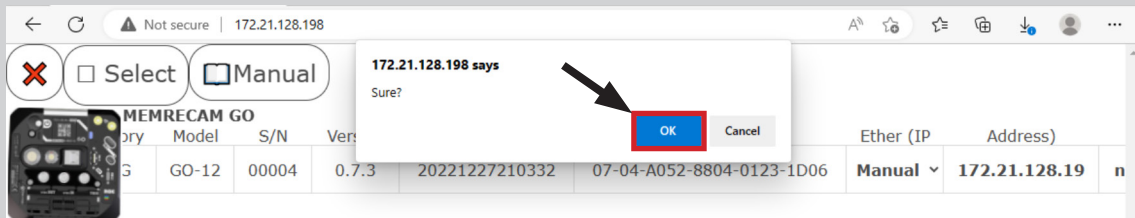


To activate the setting, tap on a blank spot on the screen.

A confirmation message will appear.

Tap "OK" to change the setting.

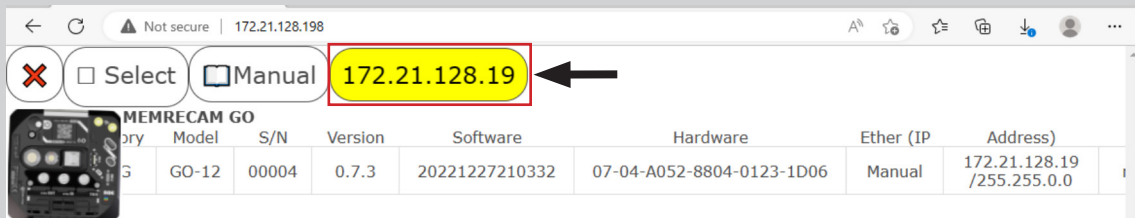
3)



After changing the settings, the IP address of the camera will be changed and it cannot be controlled from the connected browser.

Please tap the IP address displayed in yellow.

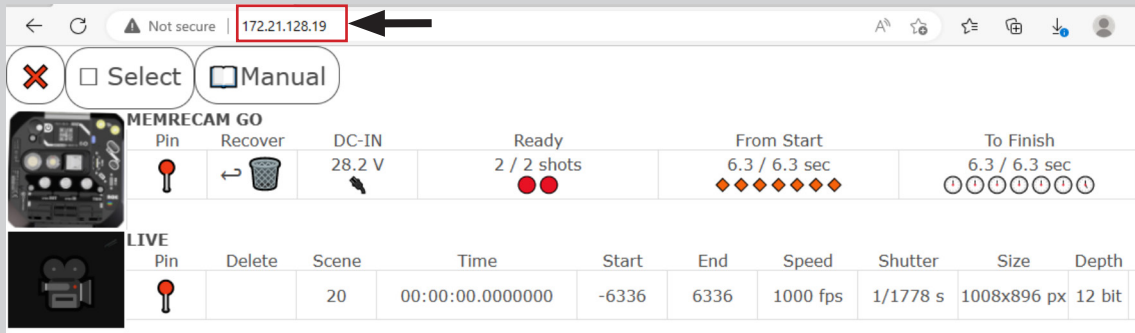
4)





The IP address of the browser is changed and the camera can be controlled

5)

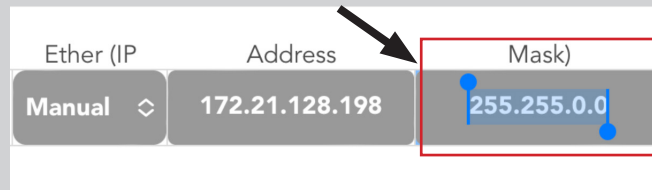


Subnet mask change for wired LAN (GO-Touch)

How to set up

1)

Make sure the Ether IP is set to "Manual".
"Mask)" to enable input.



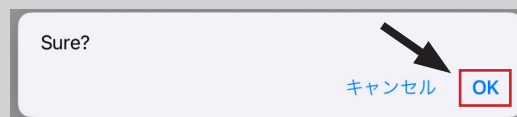
2)

Enter the IP address. In the example, "255.255.255.0" is entered.



3)

To activate the setting, tap on a blank spot on the screen.
A confirmation message will appear.
Tap "OK" to change the setting.



4)

To control the camera after the configuration change, the subnet mask of the connected PC or other device will be changed.

To set up with HXUtility



Do not start up and use MLink and HXUtility at the same time.
HXUtility should be used after closing the MLink application.



"Video and IPAddress setting"
Change IP address and subnet mask.

"Factory Set"
Resets the camera settings to the factory defaults. Note that changed settings and recording data in the camera will also be initialized. The power will be turned off in the initialized state, so turn it on again. This is the same operation as pressing and holding down the [RESET] button on the camera.

"Camera Reboot"
If the camera stops working for some reason, the camera will restart.

"Exit"
Exit the application.

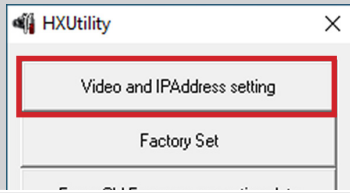


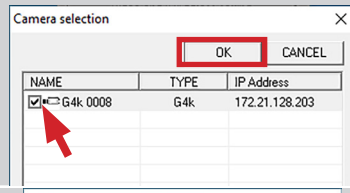
HXUtility is a common application for each of our cameras, and some functions are not available for GO cameras. Some functions that are not available will not work even if clicked.



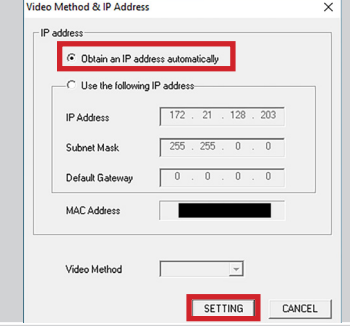
Change the DHCP function of the wired LAN (HXUtility)

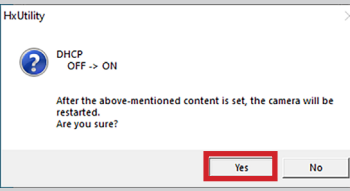
How to set up

- 1) 

Click [Video and IPAddress setting].
- 2) 

NAME	TYPE	IP Address
<input checked="" type="checkbox"/> G4k 0008	G4k	172.21.128.203

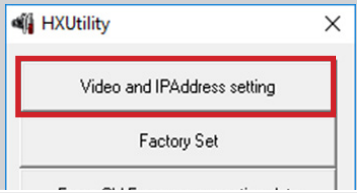
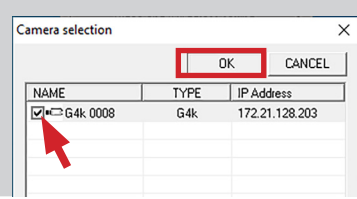
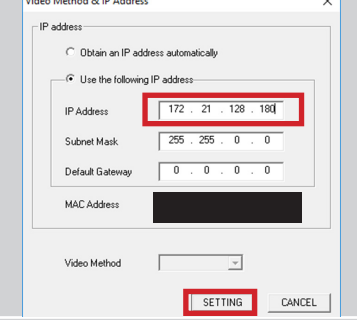
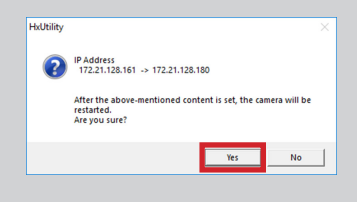
Cameras on the same network will be displayed.
Check the cameras to be changed and click [OK].
- 3) 

Select [Obtain an IP address automatically] and click [Setting].
- 4) 

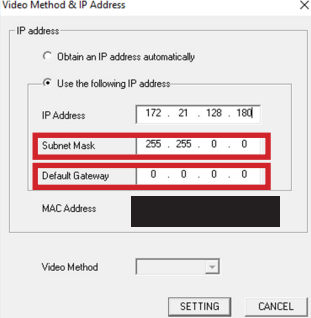
A message window appears to confirm the change. Click [Yes] to make the change.
The camera can be used after rebooting.

IP address configuration for wired LAN (HXUtility)

How to set up

<p>1)</p>		<p>Click [Video and IPAddress setting"].</p>												
<p>2)</p>	 <table border="1" data-bbox="263 577 582 689"> <thead> <tr> <th>NAME</th> <th>TYPE</th> <th>IP Address</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> G4k 0008</td> <td>G4k</td> <td>172.21.128.203</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NAME	TYPE	IP Address	<input checked="" type="checkbox"/> G4k 0008	G4k	172.21.128.203							<p>Cameras on the same network are displayed. Check the cameras to be changed and click [OK].</p>
NAME	TYPE	IP Address												
<input checked="" type="checkbox"/> G4k 0008	G4k	172.21.128.203												
<p>3)</p>		<p>Enter the address to be set in the [IP Address] field. In the example, "172.21.128.180" is entered.</p> <p>When finished, click on "SETTING".</p>												
<p>4)</p>		<p>A message window appears to confirm the change. The IP address before and after the change is displayed. Click [Yes] to change the IP address. The camera can be used after rebooting.</p>												

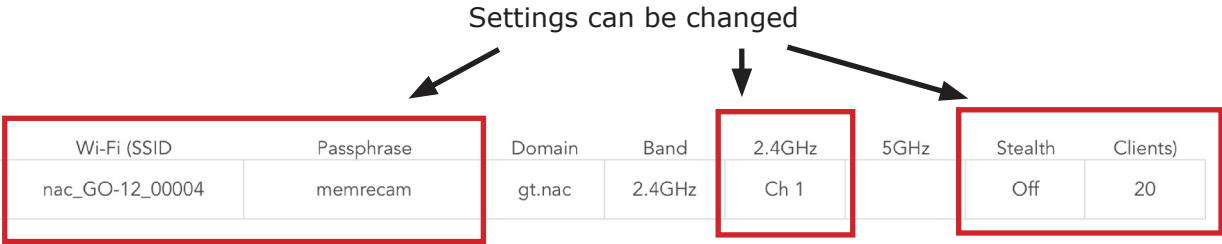
Subnet mask and default gateway settings

	<p>Enter the address to be changed in [Subnet Mask] and [Default Gateway] in the same way as for [IP Address].</p>
---	--



Wi-Fi Settings

Change the Wi-Fi settings when necessary depending on usage environment.



Setting point	Description.
Wi-Fi SSID	SSID of the Wi-Fi adapter. (Default setting: nac_GO-Camera type_CID) Only one-byte alphanumeric characters can be set.
Passphrase	Change the password for connecting to the Wi-Fi (Default: memrecam). Only one-byte alphanumeric characters can be set. 8 Set more than one character.
2.4GHz	2.4 GHz channel. Changing channels may improve Wi-Fi connectivity in environments with radio interference or poor wireless conditions. Can be set from Ch 1 to Ch 11.
Stealth	Turn ON/OFF the function to notify the SSID of the Wi-Fi to tablets and other devices.
Clients	When using Wi-Fi, set the number of simultaneous connections for tablets and other devices that can be connected (default 20)

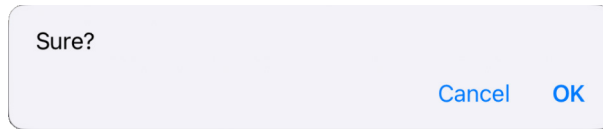
If the changed settings are to be initialized

Reset the camera to factory default settings. (see page 35)

Network Configuration

Common Items Enable changed settings?

To activate the setting, tap on a blank spot on the screen.



A confirmation message will appear.

Tap "OK" to change the setting.

How to change Wi-Fi SSID and Passphrase

Tap each item to enter text.

Enter the item to be changed.

To activate the settings after changes have been made, please follow the instructions in "Common Items Enable changed settings?" to make the settings effective after changes are made.

Configuration Items	Input Restrictions
Wi-Fi SSID	Only one-byte alphanumeric characters can be used. Spaces (blanks) cannot be used.
Passphrase	Only one-byte alphanumeric characters can be used. Space (blank) cannot be used. Please set at least 8 characters.



Attention The expected operation will not be achieved with settings that do not meet the above restrictions.

In this case, it is recommended to restore the factory default settings.

(see page 35)



MEMRECAM GO		Wi-Fi (SSID)	Passphrase	Domain	Band	2.4GHz	5GHz	Stealth)
30.9	0.0	nac_GO-12_01009	memrecam	gt.nac	2.4GHz	Ch 1	Ch 44	Off



MEMRECAM GO		Wi-Fi (SSID)	Passphrase	Domain	Band	2.4GHz	5GHz	Stealth)
30.9	0.0	nac_GO-12_01009	memrecam	gt.nac	2.4GHz	Ch 1	Ch 44	Off



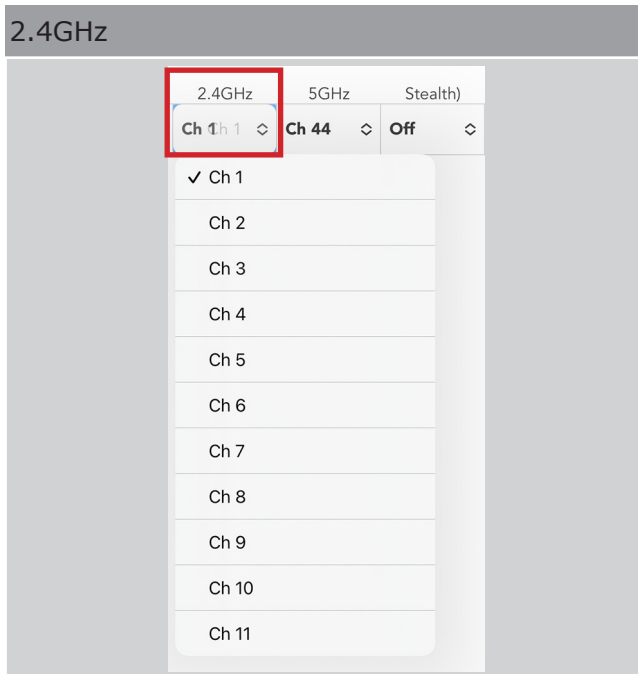
Attention The Wi-Fi SSID and Passphrase will need to be changed again to change the connection to the tablet or PC after the change.

Change the Wi-Fi SSID or Passphrase of the camera registered on your tablet or PC.

It is recommended to reconnect with the QR code on the camera's e-paper.

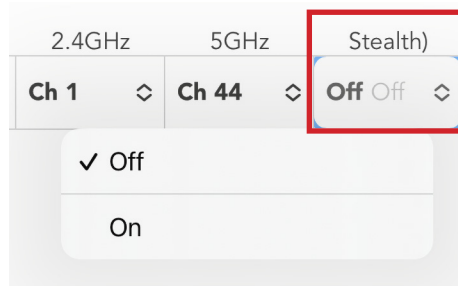
How to set 2.4GHz channels

Tap the 2.4GHz item to display a pull-down menu. Tap the item to be set from the menu. To make the setting effective after the change, please follow the instructions in "Common Items Enable changed settings?" to make the setting effective after the change.



How to set up Stealth

When the Stealth feature is turned on, the SSID cannot be found by tablets and PCs. Tap an item to display a pull-down menu. Tap the item you want to set from the menu. To make the setting effective after the change, see "Common Items Enable changed settings?" to make the setting effective after the change.



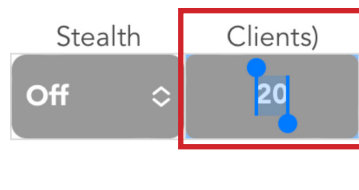
How to set Clients (number of connected terminals)

Set a limit on the number of tablet devices that can be connected to the camera using the wireless LAN adapter. Connecting with a large number of terminals may cause operational errors and load on the network.

The default setting is set to [20].

Tap the item to enter a numerical value.

To make the setting effective after the change, please follow the instructions in " Enable changed settings?" to make the setting effective after the change.



LIVE

Set the speed, shutter speed, and other recording-related settings.

Settings are displayed by scrolling horizontally on the MENU screen.

LIVE and PLAY share the same display items.

LIVE									
Scene2(nac_GO-12_00004)									
Pin	Black	Shot	Save	Remain	Download	Remain	Start	End	
							-17460	-1	

PLAY									
Scene1(nac GO-12 00004)									
Pin	Black	Shot	Save	Remain	Download	Remain	Start	End	
				0		0	-12673	12672	

LIVE						
Scene2(nac_GO-12_00004)						
Name	Scene	Comment	Time	Speed	Shutter	
Scene2(nac_GO-12_00004)	2		2023/9/11 16:18:46	1000 fps	1/2000 s	

PLAY						
Scene1(nac GO-12 00004)						
Name	Scene	Comment	Time	Speed	Shutter	
Scene1(nac_GO-12_00004)	1		2023/9/11 16:09:35	1000 fps	1/2000 s	

LIVE										
Scene2(nac_GO-12_00004)										
Width	Height	Depth	ISO speed	Sensitivity	Tone	DarkCorrect	SatWhite	WB	(RGain	
1008 px	896 px	12 bit	ISO 4000	1.0	1.55	Off	On	Custom	1.8	






PLAY										
Scene1(nac GO-12 00004)										
Width	Height	Depth	ISO speed	Sensitivity	Tone	DarkCorrect	SatWhite	WB	(RGain	
1008 px	896 px	12 bit	ISO 4000	1.0	1.55	Off	On	Custom	1.8	

LIVE										
Scene2(nac_GO-12_00004)										
GGain	BGain	OETF	Quality	Color	FalseColor	Debayer	MCFF	(Sharpen	Denoise	LUT
1	1.65	sRGB	85%	Matrix	Correct		On	Off	On	Custom

PLAY										
Scene1(nac GO-12 00004)										
GGain	BGain	OETF	Quality	Color	FalseColor	Debayer	MCFF	(Sharpen	Denoise	LUT
1	1.65	sRGB	85%	Matrix	Correct		On	Off	On	Custom

LIVE									
Scene2(nac_GO-12_00004)									
Normal (Gain	Gamma	Knee)	Custom (Min	Max	Gamma)	Chroma)	Model	S/N	
			64	2080	0.7	100%	GO-12	00004	

PLAY									
Scene1(nac GO-12 00004)									
Normal (Gain	Gamma	Knee)	Custom (Min	Max	Gamma)	Chroma)	Model	S/N	
			64	2080	0.7	100%	GO-12	00004	

	Ensure that the INFO menu is always visible in the screen. Tap to toggle ON/OFF. (▶▶ 56)	
Pin		OFF
		ON
Black		Updates the black balance (noise and black level correction data) to compensate for fixed pattern noise on the sensor.
Shot		Trigger and record.
Save	Not used in LIVE.	
Remain	Not used in LIVE.	
Download		Batch Download
Remain	Not used in LIVE.	
Start	The start frame of the segment is displayed.	
End	The end frame of the segment is displayed.	
Name	<p>Set the file name before the picture. The default setting is [Scene + scene number + (Camera in Info) + comment]. (Example) Scene 1 (nac_GO-12_0004) TEST-G To return to the default settings, delete the characters you entered and leave blank.</p>	
Scene	<p>Scene Number. One is added for each recording. Can be changed by input. If multiple cameras are used, they must have the same value.</p>	
Comment	<p>Comment input field. By entering a comment, it will be reflected in the file name in Name. To return to the initial state, delete the characters entered and leave the field blank.</p>	
Time	Displays the current time.	
Speed	Sets the recording speed.	
Shutter	Sets the vertical resolution.	
Width	Sets the horizontal resolution.	
Height	Sets the vertical resolution.	
Depth	Pixel bit length. Camera is fixed at 12 bits.	

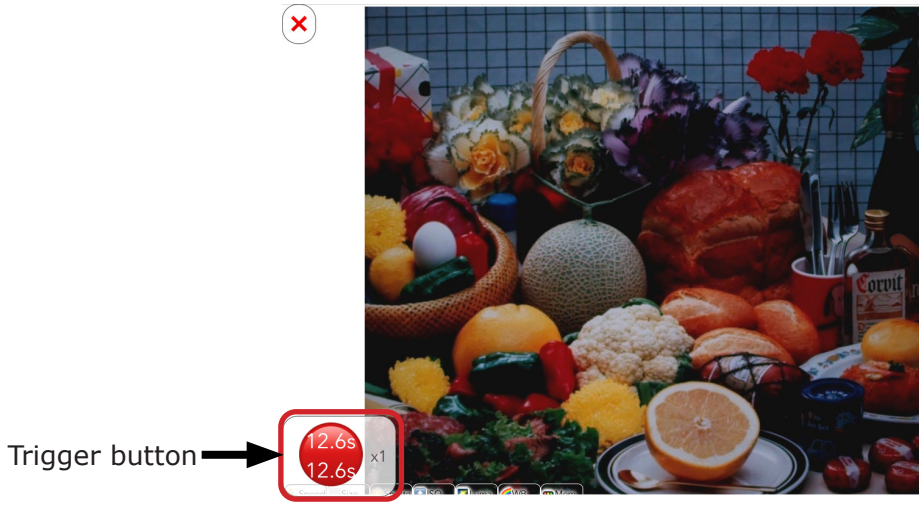
ISO speed	Sets the ISO sensitivity. If MCFF is On, changes made here will not be reflected in the image, so make changes within the live screen.	
Sensitivity	Sets the analog gain to be applied to the image sensor.	
	S1	Analog gain 0.5x
	S2	Analog gain 1.0x (default setting)
	S3	Analog gain 2.0x
Tone	Sets the video brightness tone curve characteristic. A value close to the real-world characteristics is set to 1. A larger value tends to make dark areas more subdued and image noise more noticeable. Lower values emphasize dark areas and make them more visible. The default value is 1 for monochrome cameras and 1.55 for color cameras.	
DarkCorrect	Enables/disables correction to reduce noise patterns in dark areas. (If MCFF is to be saved as a file, set this parameter to Off beforehand.)	
	Off	No correction (default setting)
	On	Corrected
SatWhite	If MCFF is Off, this parameter determines whether or not the correction is applied to naturalize the color tones in high-luminance areas.	
	Off	No correction
	On	Corrected (default setting)
WB	White Balance Setting	
	Custom	Set the white balance manually. (Default setting)
	3100K	This is used when the color temperature of the light source is known. There are three color temperatures that can be set: 3100K, 5000K, and 9000K.
	5000K	
9000K		
(RGain	Sets the R (red) at CUSTOM. (Default value 1.8)	
GGain	Sets the G (green) at CUSTOM. (Default value 1)	
BGain)	Sets the B (blue) at CUSTOM. (Default value 1.65)	

OETF	Set up the display to match the characteristics of the display in use.	
	Linear	Linear characteristics suitable for luminance analysis
	BT.601	Gamma characteristics suitable for SDTV displays, etc.
	sRGB	Gamma characteristics (including BT.709) suitable for commonly used HDTV displays, etc. (Default setting)
	BT.2100(HLG)	Gamma characteristics suitable for HDR displays, etc.
Quality	Sets the quality of the live image and JPEG storage. (Default 85)	
Color	Select the correction method for the color characteristics of the image sensor.	
	Original	Does not compensate for the color characteristics of the sensor. Overall saturation is low, but color saturation is suppressed.
	Matrix	Corrects for characteristics close to those of real-world color tones. The overall saturation is natural, but the colors in high-luminance areas may be unnatural or some colors may be indistinguishable, Some colors may become unnatural or indistinguishable. (Default setting)
FalseColor	Enables/disables correction to naturalize image edge tones	
	Through	Does not correct false color at edges.
	Correct	Corrects false color at edges. (Default setting)
Debayer	Selects the degree of color processing when MCFF is Off.	
	Lv.0	Speed-oriented color processing
	Lv.1	Standard quality color processing (Default setting)
MCFF	Select image processing method.	
	Off	Speed-oriented image processing
	On	Image processing equivalent to MCFF playback (MCFF conversion method B3 , D3) in MLink, etc. (Default setting)
(Sharpen)	Sets the degree of edge enhancement when using MCFF.	
	Off	No edge enhancement. (Default setting)
	Low	Edge enhancement (Low)
	Middle	Edge enhancement (Middle)
	High	Edge enhancement (High)

Denoise	Sets whether or not the random noise component removal (low-pass filter) is used when MCFF is used.	
	Off	Random noise component removal is not performed.
	On	Random noise component removal. (Default setting)
LUT	Selects the luminance characteristics when MCFF is used.	
	Normal	Display using gain, gamma, and knee settings
	Linear	Image data is displayed as is without correction.
	Custom	Displays camera data with specified input/output conversion characteristics. (Default setting)
	Table	Applies a user-specified luminance table written in a text file. (Must be configured in MLink)
Normal (Gain)	Gain setting when LUT is set to Normal	
	Low	Increases gain by 1 aperture. (Default setting)
	Normal	Set to standard brightness.
	High	Increase the gain by 1 aperture.
Gamma	Gamma setting when LUT is set to Normal	
	Off	Gamma correction is not performed. (Default setting)
	Low	Low gamma correction is applied.
	Normal	Performs normal gamma correction.
Knee)	Knee setting when LUT is set to Normal	
	Off	Enable knee. (Default setting)
	On	Disables the knee.
Custom (Min	Minimum input luminance setting when LUT is set to Custom. (Default setting 64)	
Max	Maximum input luminance setting when LUT is set to Custom. (Default setting 2080)	
Gamma)	Gamma setting when the LUT is set to Custom. (Default setting: 0.7 for color cameras, 0.45 for monochrome cameras)	
Chroma)	Chroma setting for MCFF. (Default setting: 100% for color cameras)	
Model	Camera type (GO-9/GO-12/GO-4K).	Settings cannot be changed.
S/N	Serial number of camera.	

LIVE

View the current camera image and set the recording settings.
Tap the image to hide the menu and buttons and display only the image.
Tap again to display the menu and buttons.



Displaying the Settings Menu

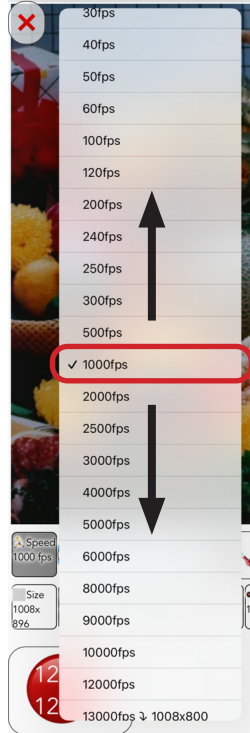
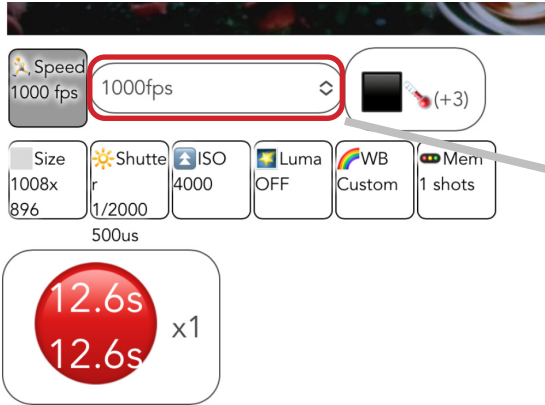
Display of the current camera image and recording settings can be made.

- (1) Slide up the LIVE screen range
- (2) The setting menu slides.

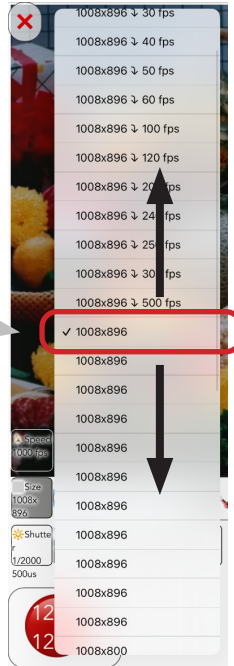
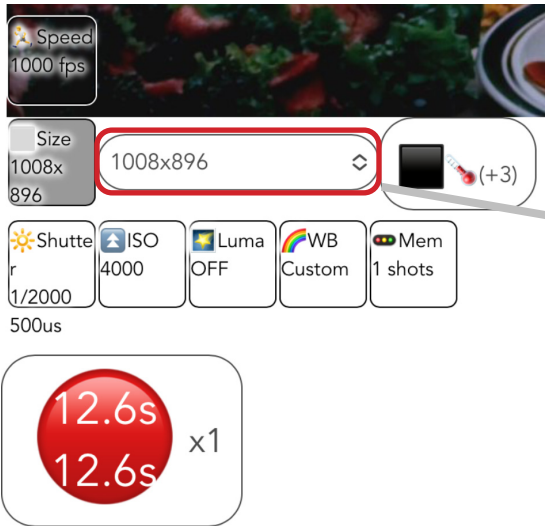


Setting item	Setting details
Speed	Set the recording speed.
Resolution	Set the resolution.
Shutter	Sets the shutter speed.
ISO	Set ISO sensitivity.
Luma	Display the brightness graph and set the metering area.
WB	Set the white balance.
Mem	Set the memory segment and trigger position.

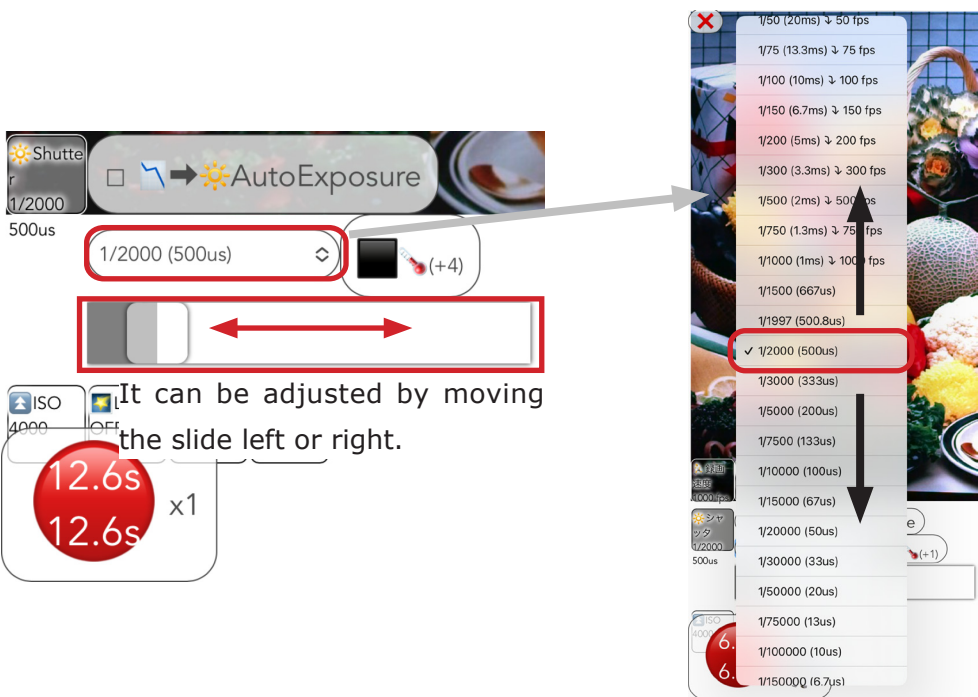
Speed



Size



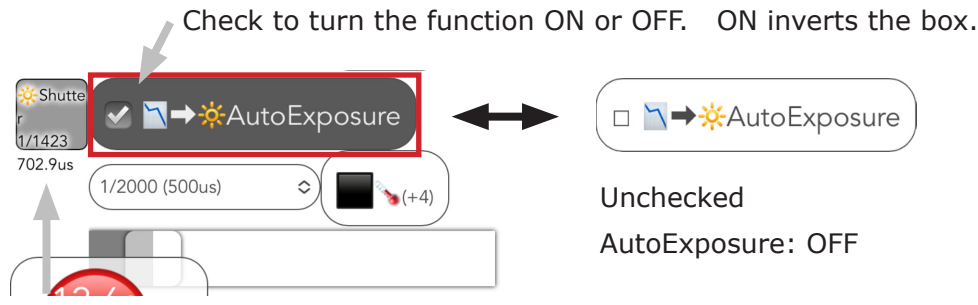
Shutter



It can be adjusted by moving the slide left or right.

AutoExposure

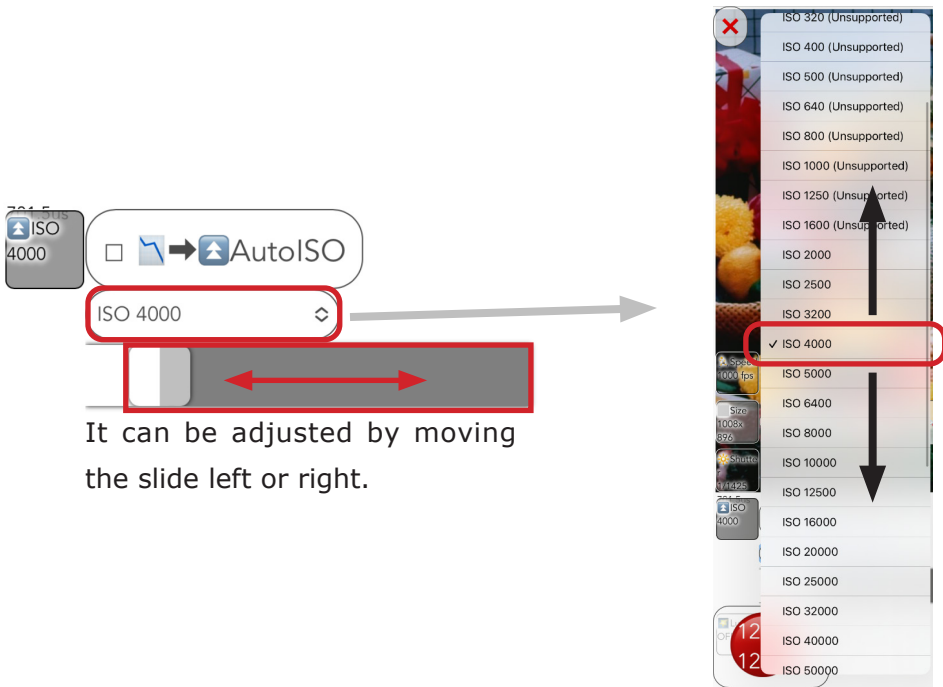
When this check box is selected, the camera determines the brightness of the subject and automatically adjusts the shutter speed. The brightness of the subject to be judged for automatic exposure is within the specified area that can be set in Luma.
(See page 85)



The shutter speed adjusted by the camera is displayed in real time.

AutoExposure use instructions	
1)	Check the box; AutoExposure is turned on.
2)	The camera adjusts the shutter speed. Adjust the brightness of the subject and the aperture of the lens. At this stage, the shutter speed is updated as needed and is reflected in the recorded video.
3)	If unchecked, shutter speed is fixed to the adjusted value

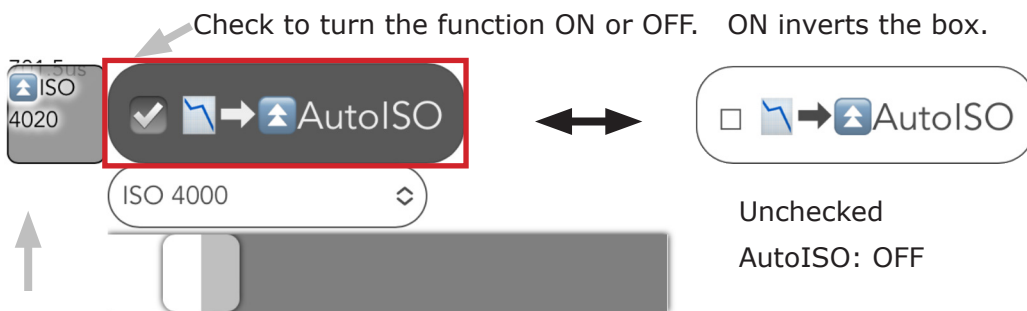
ISO



It can be adjusted by moving the slide left or right.

AutoISO

When this checkbox is selected, the camera determines the subject brightness and adjusts ISO speed



The ISO sensitivity adjusted by the camera is displayed in real time.

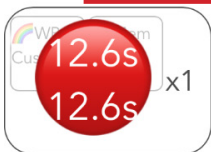
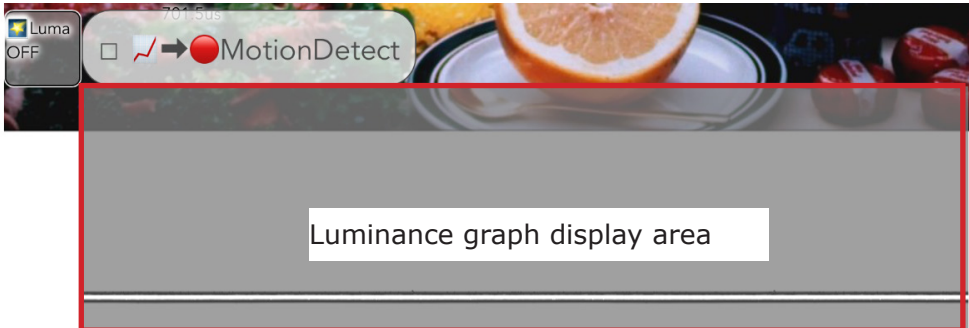
AutoISO use instructions	
1)	Check the box; AutoISO is turned on.
2)	The camera adjusts the ISO sensitivity. Adjust the brightness of the subject and the aperture of the lens. The ISO sensitivity is not set at this stage and is not reflected in the recorded video.
3)	Unchecking the box sets the ISO sensitivity.

Luma

Luminance graphs can be displayed, areas can be specified, and MotionDetect can be set. MotionDetect sets can be checked for ON/OFF.

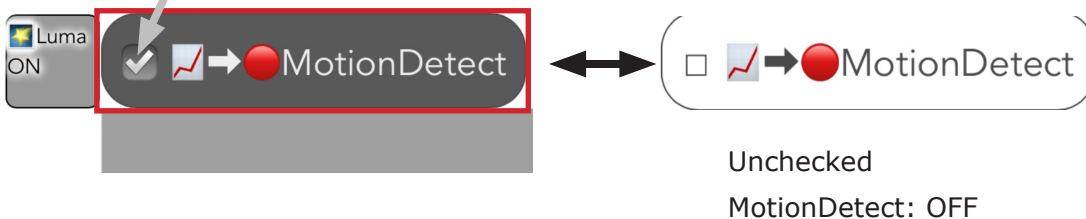


"MotionDetect" is the same function as "Image Trigger" of our conventional model.



The vertical axis represents the luminance average.
The horizontal axis is the time axis. The right end is the latest.

Check to turn the function ON or OFF. ON inverts the box.



The luminance graph can be displayed and the designated area for MotionDetect can be set by tapping on the screen. Two types of area designation are available: "entire screen" or "63 pixels x 64 pixels".



When the entire screen is set

Tap the desired area to display a white frame.
Tap inside the white frame to switch the area specification to the entire screen.



When area range is set



The luminance graph display may temporarily change when switching area designations.

MotionDetect (luminance detection automatic trigger input function)

This function automatically inputs a trigger when there is a sudden change in luminance within the metering area set by Luma. It responds quickly to changes in luminance, with a delay of approximately one frame before the trigger is input.



Specify the area.

The example specifies the strobe's flash part.

The trigger input for recording is triggered by the strobe light.

Combined use of MotionDetect + AutoExposure

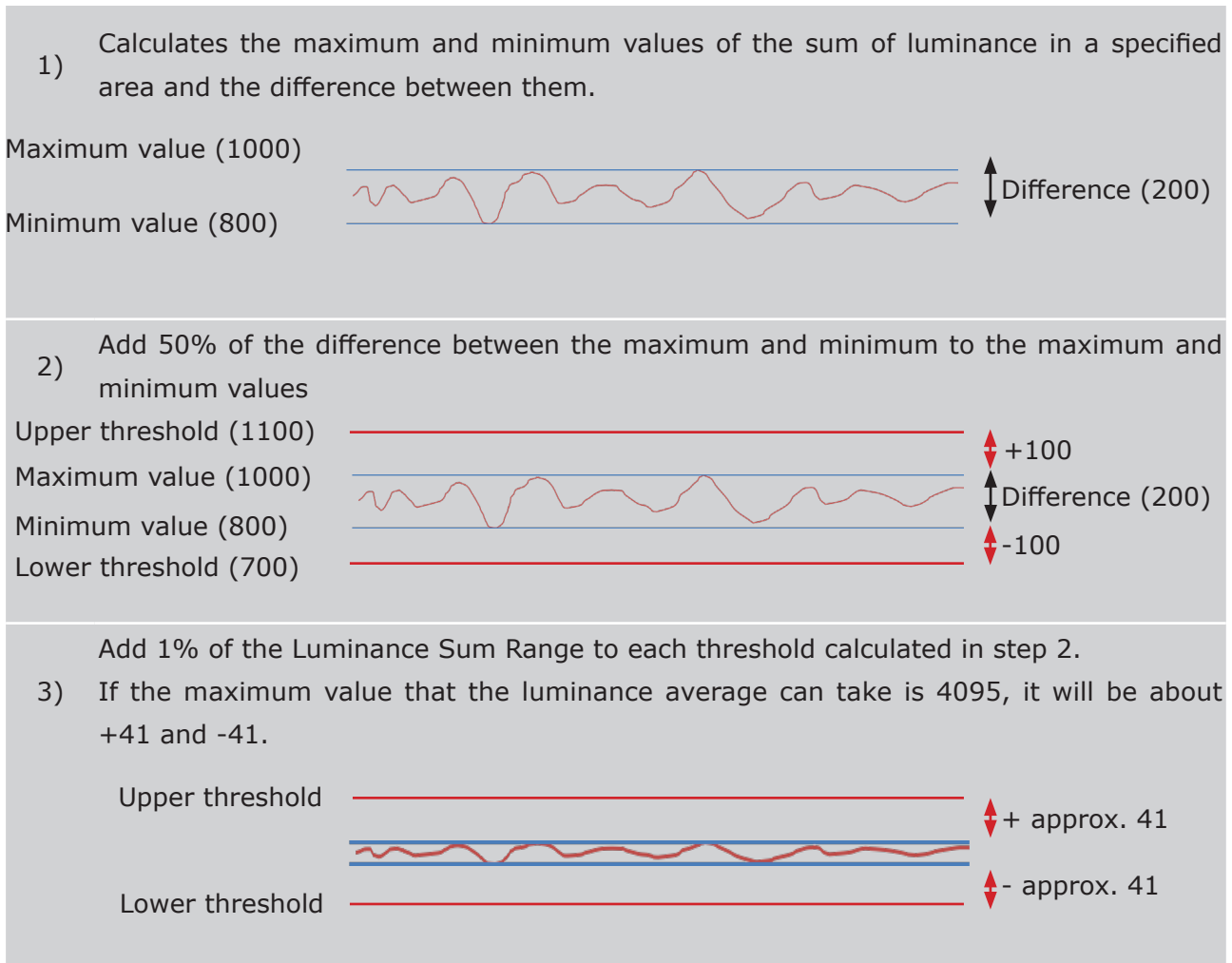
Using this function together with Luma is effective for reducing overexposure to the subject when the luminance changes suddenly within the metering area set by the camera.

AutoExposure may not be effective for some luminance changes.

Image trigger threshold calculation

The image trigger threshold calculation is performed by the following internal process, taking into account both cases of large and small flicker due to illumination.

(This is a schematic diagram and differs from the actual scale.)

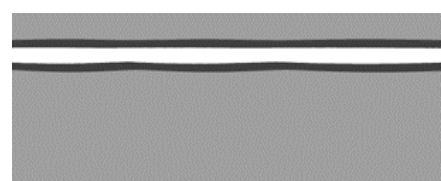


About the luminance graph

The values are displayed within the range of possible luminance averages (e.g., 0 to 4095).

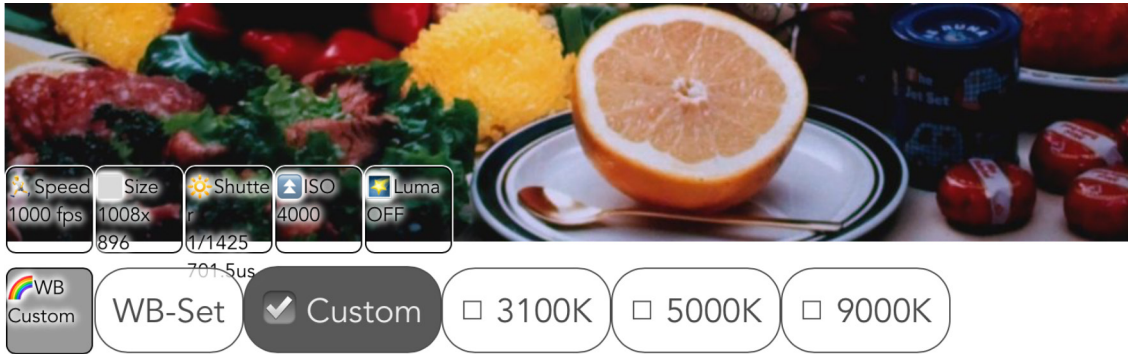
The upper and lower black lines indicate the upper and lower image trigger thresholds.

Example of a case with flicker



WB

White balance can be set.



Button	Function
WB-Set	Before recording, take a picture of a white object (e.g., paper) and precisely adjust the white balance value.
Custom	Factory setting.
3100K	Used when the color temperature of the light source is known. The color temperature of the light source can be set to 3100K, 5000K, or 9000K.
5000K	
9000K	

Manual white balance setting

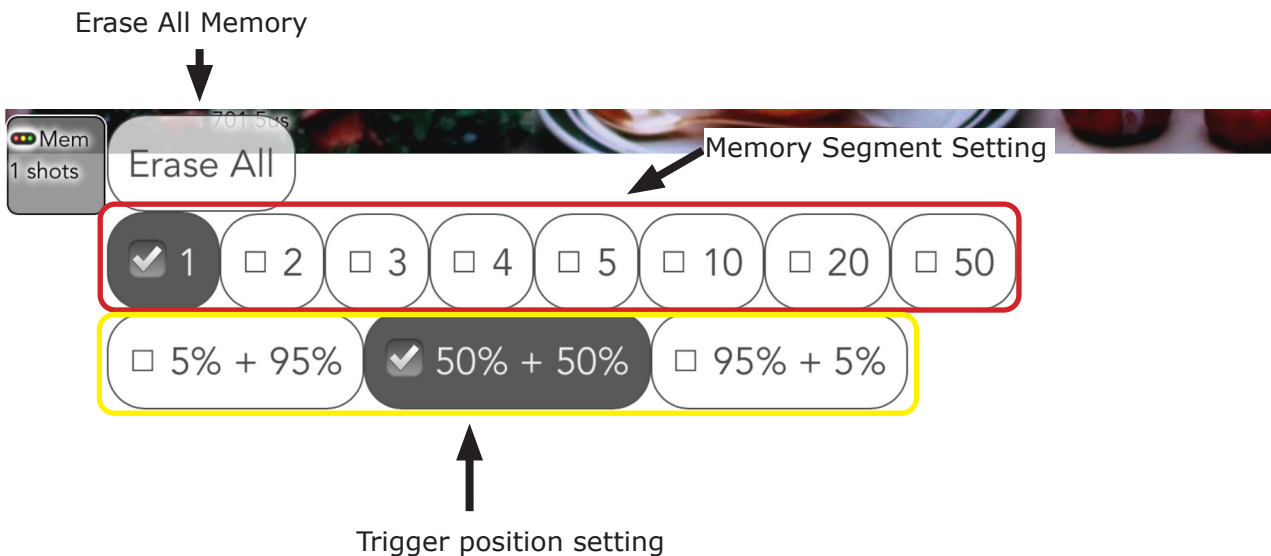
Manual white balance settings can be made to obtain more accurate subject tints, for example, when multiple light sources are present.

How to manually set the white balance

- 1) Extremely bright or dark whites will not produce normal white balance. Adjust the aperture and light source to achieve the appropriate brightness.
- 2) With the white object projected, tap "WB-Set" in the white balance settings. The camera processes and reflects the white balance data in the LIVE image.

Mem

Memory segment settings and trigger position settings can be made.



Button	Function
Erase All	Erase all images in memory.
1 to 50	Sets the memory segment partitioning.
5% +95%	This setting is used when recording phenomena that occur immediately after the trigger is input. It is a conventional start trigger.
50% +50%	This setting is used when recording phenomena that occur before and after the trigger input. It is a conventional center trigger.
95% +5%	This setting is used when recording a phenomenon that occurs just before the trigger input (and is finished at the time of trigger input). It is a conventional end trigger.

Erase All

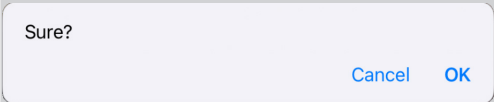
Erase all images in memory.



Attention Be sure to save the necessary images before implementing Erase All.

Erase All Steps

1) Tap "Erase All" and a confirmation message window will appear.



Tap "OK" to execute.
Tap "Cancel" to interrupt

Memory Segment

MEMRECAM GO uses memory in a much different way than previous products.

Segment changes can be made even with recorded data.

Recorded data will not be lost due to segmentation.

Memory size of one segment (GB)

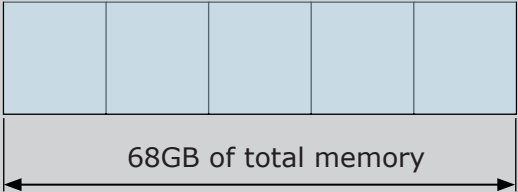
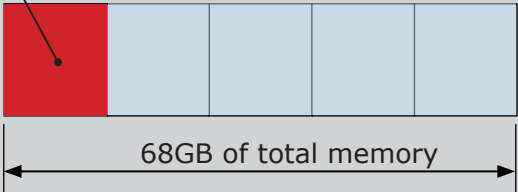
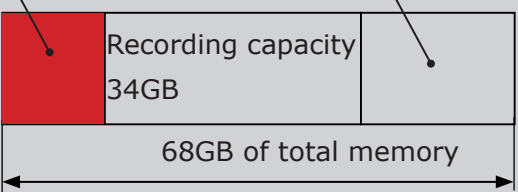
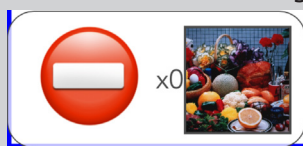
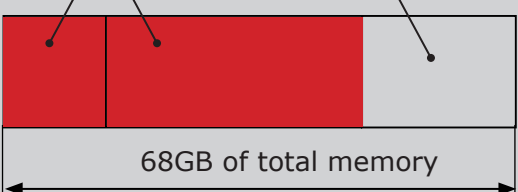
		Camera memory size		
		17.00	34.00	68.00
Number of segments	1	17.00	34.00	68.00
	2	8.50	17.00	34.00
	3	5.67	11.33	22.67
	4	4.25	8.50	17.00
	5	3.40	6.80	13.60
	10	1.70	3.40	6.80
	20	0.85	1.70	3.40
	50	0.34	0.68	1.36



Attention The memory size for segment partitioning is the value that would be obtained if the entire camera memory were partitioned. The actual memory size is different from the values in the table. This is because there is data to be recorded in addition to the recorded data.

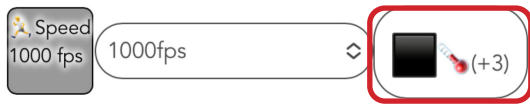
About memory segments in MEMRECAM GO

Example A camera with 68GB memory divided into 5 segments

	<p>1 The segment is divided into 5 segments and then triggered to record.</p>
<p>Recorded Memory remaining 4 segments 54.4GB</p> 	<p>2 One segment was recorded. If the recording time is longer than the current setting, re-set the segmentation. For example, the maximum segment that can be set from the remaining memory is "34 GB" in "2 segments". (see table page 90)</p>
<p>Recorded Memory remaining 22.4GB</p> 	<p>3 After dividing into two segments, only one can be recorded at a time. There is enough memory remaining, but not 34 GB free, so it cannot record. When recording is not possible, the trigger button will be as shown in the figure.</p> 
<p>Recorded Memory remaining 22.4GB</p> 	<p>4 Set the number of divisions (4 or more) to continue recording while data remains in the memory. (see table page 90)</p>

Black balance button

Tap the button and the camera will automatically acquire the black balance. Shading of the lens or camera mount is not necessary.



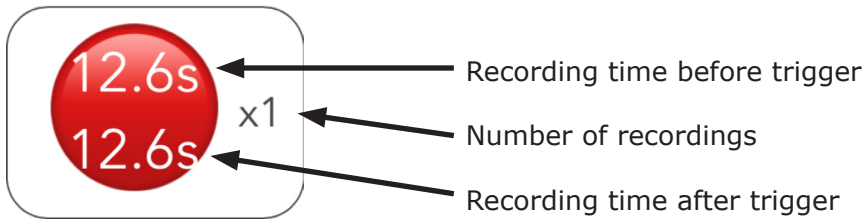
(+1) indicates the temperature difference between the current sensor temperature and the sensor temperature at black balance acquisition. Use this as a reference when acquiring black balance.

About Black Balance

The image sensor used in the camera produces noise and black levels that vary depending on the temperature of the sensor and the recording settings. This noise is called fixed pattern noise and has a different pattern for each solid state of the image sensor.

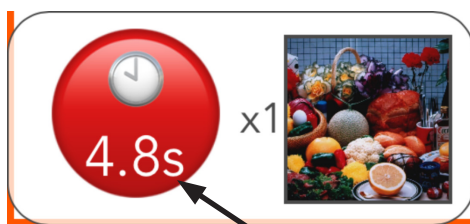
The camera reads the temperature of the image sensor and automatically reduces noise using individually registered image correction data, but for higher quality images, it is recommended that black balancing be performed immediately before recording.

The camera is already ready to record at startup. Tap the trigger button to start recording.

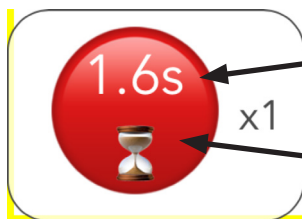


The example in the figure shows that the camera can record 12.6 seconds each before and after the moment the trigger button is tapped.

It is the state of "center trigger" in our conventional product.



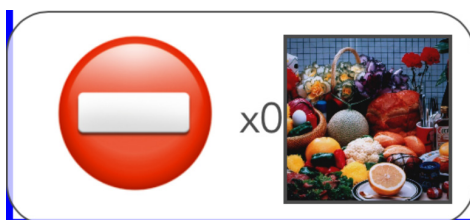
Indicates the time remaining until the end of recording after the trigger.



Recording time before trigger

Indicates the remaining time until all recordable recording times before the trigger are recorded.

If the trigger is made before the hourglass mark disappears, the recording will be shorter than the available recording time before the trigger.



The memory space available for recording has run out. To start recording, the recorded video must be deleted.

PLAY

Playback of recorded video, simple analysis, and data storage.

Settings are displayed by scrolling horizontally on the MENU screen.

LIVE and PLAY have the same display items, but the items that can be set or changed are different.

LIVE									
	Scene2(nac_GO-12_00004)								
	Pin	Black	Shot	Save	Remain	Download	Remain	Start	End
								-17460	-1

PLAY									
	Scene1(nac GO-12 00004)								
	Pin				0		0	-12673	12672

LIVE									
	Scene2(nac_GO-12_00004)								
	Name	Scene	Comment	Time	Speed	Shutter			
	Scene2(nac_GO-12_00004)	2		2023/9/11 16:18:46	1000 fps	1/2000 s			

PLAY									
	Scene1(nac GO-12 00004)								
	Scene1(nac_GO-12_00004)	1		2023/9/11 16:09:35	1000 fps	1/2000 s			

LIVE										
	Scene2(nac_GO-12_00004)									
	Width	Height	Depth	ISO speed	Sensitivity	Tone	DarkCorrect	SatWhite	WB	(RGain
	1008 px	896 px	12 bit	ISO 4000	1.0	1.55	Off	On	Custom	1.8

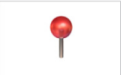




PLAY										
	Scene1(nac GO-12 00004)									
	1008 px	896 px	12 bit	ISO 4000	1.0	1.55	Off	On	Custom	1.8

LIVE										
	Scene2(nac_GO-12_00004)									
	GGain	BGain	OETF	Quality	Color	FalseColorDebayer	MCFE	(Sharpen	Denoise	LUT
	1	1.65	sRGB	85%	Matrix	Correct	On	Off	On	Custom

PLAY										
	Scene1(nac GO-12 00004)									
	1	1.65	sRGB	85%	Matrix	Correct	On	Off	On	Custom

LIVE									
	Scene2(nac_GO-12_00004)								
	Normal (Gain	Gamma	Knee)	Custom (Min	Max	Gamma)	Chroma)	Model	S/N
				64	2080	0.7	100%	GO-12	00004

PLAY									
	Scene1(nac GO-12 00004)								
				64	2080	0.7	100%	GO-12	00004

Pin	Ensure that the INFO menu is always visible in the screen. Tap to toggle ON/OFF. (▶▶ 56)	
		Ensure that the INFO menu is always visible in the screen. Tap to toggle ON/OFF. (▶▶ 56)
		ON
Black	Not used in PLAY.	
Shot		Delete recorded video.
Save		Saves recorded video to SSD. (TIFF8 only)
Remain	Number of frames remaining for USB storage (regardless of video format)	
Download		Download to tablet device (TIFF8 only) (▶▶ 116)
Remain	Number of frames remaining for network download (regardless of video format)	
Start	The start frame of the segment is displayed.	
End	The end frame of the segment is displayed.	
Name	<p>Displays and changes the file name set in LIVE.</p> <p>The default setting is [Scene + Scene number + (Camera in Info) + Comment].</p> <p>(Example) Scene 1 (nac_GO-12_0004) TEST-G</p> <p>To return to the default settings, delete the characters you entered and leave them blank.</p>	
Scene	Scene Number. One is added for each recording. Can be changed by inputting.	
Comment	Comment. Entering this will be reflected in the file name in Name. To return to the initial state, delete the characters you entered and leave blank.	
Time	Displays recording time.	No changes can be made.
Speed	Displays recording speed.	
Shutter	Displays shutter speed.	
Width	Displays horizontal resolution.	
Height	Displays vertical resolution.	
Depth	Pixel bit length. Camera is fixed at 12 bits.	

ISO speed	ISO sensitivity can be displayed and changed. If MCFF is On in PLAY, changes made here will not be reflected in the image, so make changes within the PLAY screen.	
Sensitivity	Display sensitivity multiplication setting.	
	S1	Analog gain 0.5x
	S2	Analog gain 1.0x (default setting)
	S3	Analog gain 2.0x
Tone	Sets the video brightness tone curve characteristic. A value close to the real-world characteristics is set to 1. A larger value tends to make dark areas more subdued and image noise more noticeable. Lower values emphasize dark areas and make them more visible. The default value is 1 for monochrome cameras and 1.55 for color cameras.	
DarkCorrect	Enables/disables correction to reduce noise patterns in dark areas.	
	Off	No correction (default setting)
	On	Corrected
SatWhite	If MCFF is Off, this parameter determines whether or not the correction is applied to naturalize the color tones in high-luminance areas.	
	Off	No correction
	On	Corrected (default setting)
WB	White balance display and settings.	
	Custom	Set the white balance manually. (Default setting)
	3100K	This is used when the color temperature of the light source is known. There are three color temperatures that can be set: 3100K, 5000K, and 9000K.
	5000K	
9000K		
(RGain	Display and set R (red) at CUSTOM. (Default value 1.8)	
GGain	Display and set G (red) at CUSTOM. (Default value 1)	
BGain)	Display and set B (blue) at CUSTOM. (Default value 1.65)	
OETF	Set up the display to match the characteristics of the display in use.	
	Linear	Linear characteristics suitable for luminance analysis
	BT.601	Gamma characteristics suitable for SDTV displays, etc.
	sRGB	Gamma characteristics (including BT.709) suitable for commonly used HDTV displays, etc. (Default setting)
	BT.2100 (HLG)	Gamma characteristics suitable for HDR displays, etc.

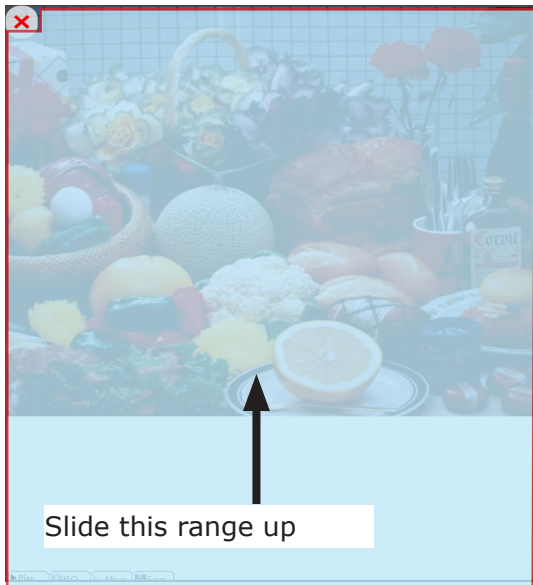
Color	Select the correction method for the color characteristics of the image sensor.	
	Original	Does not compensate for the color characteristics of the sensor. Overall saturation is low, but color saturation is suppressed.
	Matrix	Corrects for characteristics close to those of real-world color tones. The overall saturation is natural, but the colors in high-luminance areas may be unnatural or some colors may be indistinguishable, Some colors may become unnatural or indistinguishable. (Default setting)
FalseColor	Enables/disables correction to naturalize image edge tones	
	Through	Does not correct false color at edges.
	Correct	Corrects false color at edges. (Default setting)
Quality	Sets the quality of the live image and JPEG storage. (Default 85)	
Debayer	Selects the degree of color processing when MCFF is Off.	
	Lv.0	Speed-oriented color processing
	Lv.1	Standard quality color processing (Default setting)
MCFF	Select image processing method.	
	Off	Speed-oriented image processing
	On	Image processing equivalent to MCFF playback (MCFF conversion method B3 , D3) in MLink, etc. (Default setting)
(Sharpen)	Sets the degree of edge enhancement when using MCFF.	
	Off	No edge enhancement. (Default setting)
	Low	Edge enhancement (Low)
	Middle	Edge enhancement (Middle)
	High	Edge enhancement (High)
Denoise	Sets whether or not the random noise component removal (low-pass filter) is used when MCFF is used.	
	Off	Random noise component removal is not performed.
	On	Random noise component removal. (Default setting)

LUT	Selects the luminance characteristics when MCFF is used.	
	Normal	Display using gain, gamma, and knee settings
	Linear	Image data is displayed as is without correction.
	Custom	Displays camera data with specified input/output conversion characteristics. (Default setting)
	Table	Applies a user-specified luminance table written in a text file. (Must be configured in MLink)
Normal(Gain)	Gain setting when LUT is set to Normal	
	Low	Increases gain by 1 aperture. (Default setting)
	Normal	Set to standard brightness.
	High	Increase the gain by 1 aperture.
Gamma	Gamma setting when LUT is set to Normal	
	Off	Gamma correction is not performed. (Default setting)
	Low	Low gamma correction is applied.
	Normal	Performs normal gamma correction.
Knee)	Knee setting when LUT is set to Normal	
	Off	Enable knee. (Default setting)
	On	Disables the knee.
Custom (Min)	Minimum input luminance setting when LUT is set to Custom. (Default setting 64)	
Max	Minimum input luminance setting when LUT is set to Custom. (Default setting 64)	
Gamma)	Gamma setting when the LUT is set to Custom. (Default setting: 0.7 for color cameras, 0.45 for monochrome cameras)	
Chroma)	Chroma setting for MCFF. (Default setting: 100% for color cameras)	
Model	Camera type (GO-9/GO-12/GO-4K).	Settings cannot be changed.
S/N	Serial number of camera.	

Playback image

Menu display

(1) Slide the screen range up

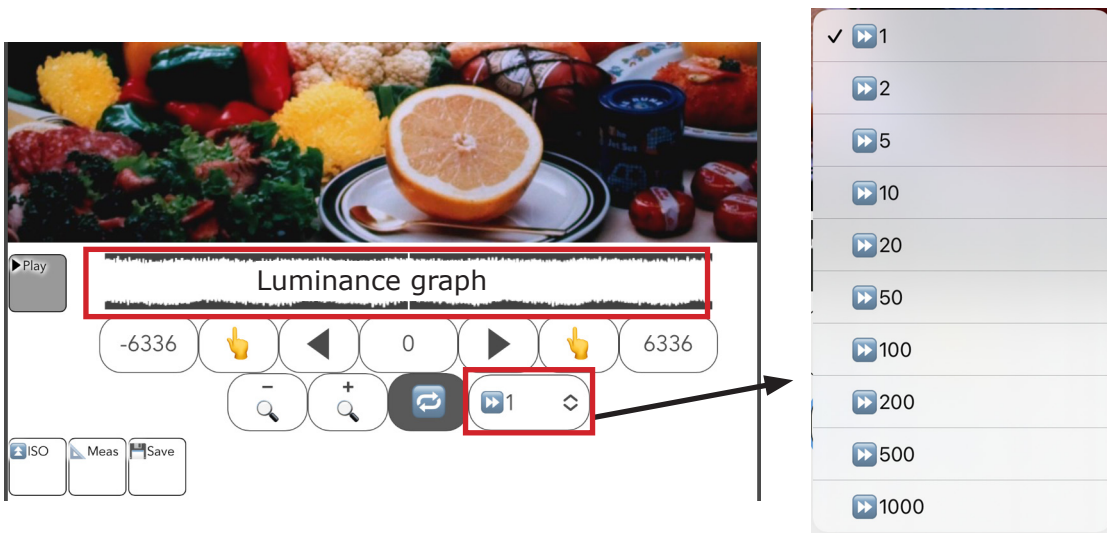


(2) The setting menu slides.


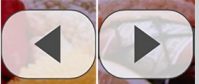

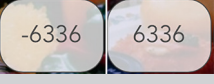
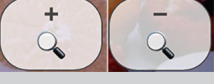

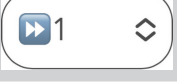


Play

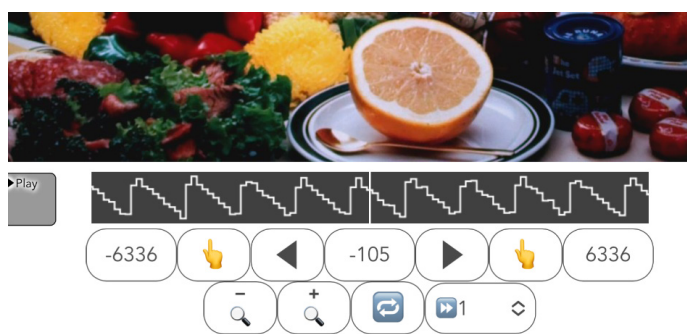
Play back video.



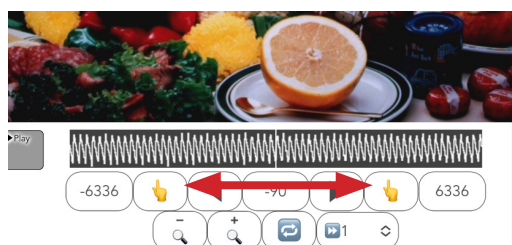
Luminance graph A graph of the total luminance values of the displayed frames. It makes it easier to look for phenomena with changes in luminance.

Button		Function
	Display frame number	Displays the frame number of the displayed image. Tap to enter a numerical value and directly specify the frame.
	Play	Playback. The direction of playback changes with the direction of the button.
	Playback range setting	Set the playback range. Tap to specify the start and end of playback, respectively.
	Playback range	Displays the playback range. Tap to enter a numerical value to specify the range.
	Luminance graph scaling	The display range of the luminance graph can be zoomed in and out.
	Loop	Repeats playback of the specified range.
	Playback speed	Playback speed can be changed. Set the speed using the pull-down menu.

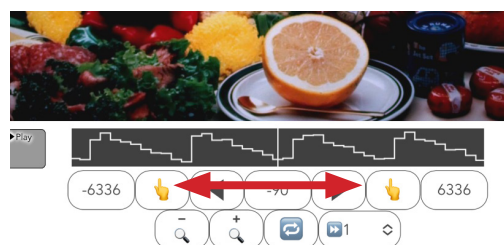
Zoom in on the luminance graph



The frame can be moved by sliding the luminance graph to the left or right. Expanding the luminance graph allows fine frame manipulation (frame feed).



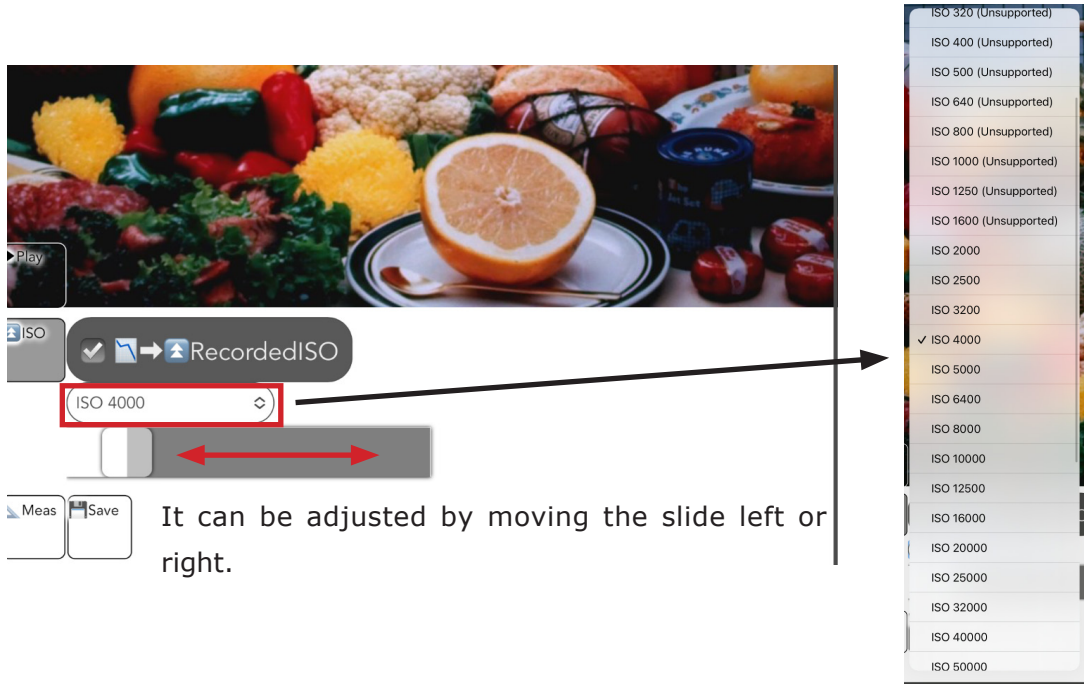
Display state immediately after recording.
Frame shift in slide large.



Zoomed in state of luminance graph.
Frame shift in slide small.

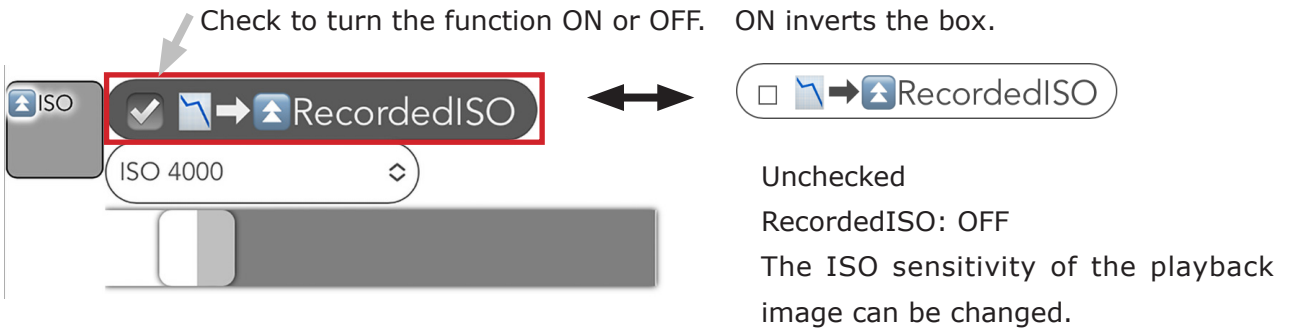
ISO

Changes the ISO sensitivity during playback. It is effective only during playback and does not affect recorded data.



RecordedISO

Uncheck the box to change the ISO sensitivity of the playback image. The default setting is checked.



Meas

Simple measurement can be performed on WebPanel.

- Actual size setting
- 2 points distance
- 3 point angle
- 2 line (4 points) angle



Attention

- The setting result is initialized by reloading the screen (web page).
- There is no function to output the result of this function. Use the screen save function of tablet etc.
- Each numerical value display is to the first decimal place.



Image analysis settings: Analyze and superimpose on the displayed image.

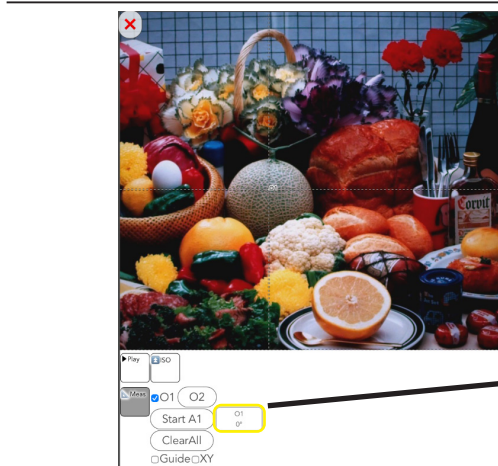
O1	Reference point: Display the reference point and crosshairs in the image display area. Multiple settings are possible.
Start A1	Measurement point: Sets the measurement point. Start from A1. It becomes the setting of the continuous line from A1. After setting A point, you can set another independent line segment with "Start B1".
Data display / input area	The values etc. displayed in this area can be changed.
Clear All	Erases all set reference points and measurement points.
Guide	Displays a guide perpendicular to the line between the two points.
XY	Displays the display numerical value separately for X and Y coordinates.

Set reference point



- 1 Tap O1 to set the reference point.
 - Even after the decision is made, the reference point can be moved by selecting the check box.
 - When O1 is selected, the angle displayed in the data display / input area is the angle based on the horizontal and vertical of the display screen (the angle is 0 °).

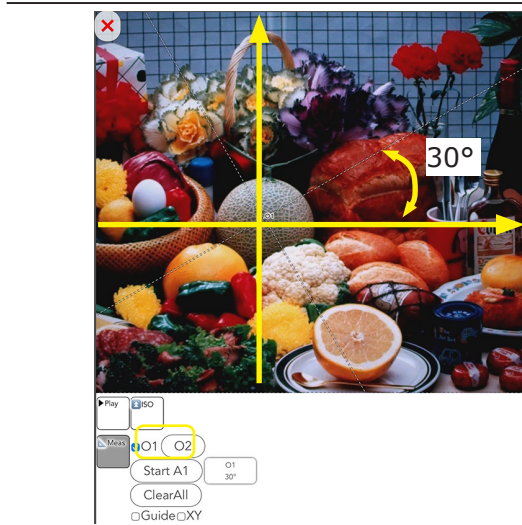
Rotate the reference point



- 1 Tap O1 and slide the main tool to determine the reference point
 - Tap the data display / input area and enter the angle.

O1
Now: 0

Cancel OK



- 2 Crosshair rotates counterclockwise with respect to horizontal and vertical of image



Attention The entered angle is retained even if all points are cleared. To perform a new measurement, select O1 again and enter "0°" in the data display/input area.

Draw a line at 2 points



Check box

Data display / input area

Play ISO

O1

A1 A2 A3

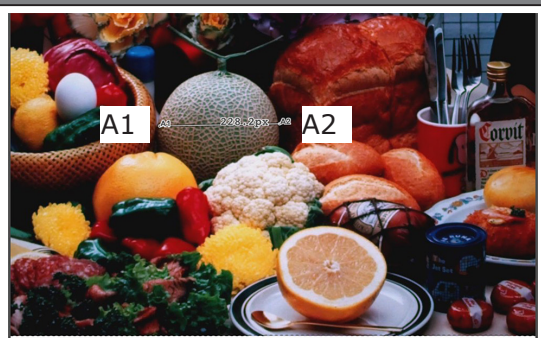
Start B1 A1-A2 594.4px

ClearAll

Guide XY

- 1 Tap A1 to determine the position, and then set A2 to draw a line connecting the two points.
 - After the position is determined, you can move the point by selecting the check box.
 - The px value displayed in the Data Display/ Input Area indicates the length of the line in pixels. This value and the unit of length can be changed by tapping in the Data Display/ Input Area.

Enter numbers and units



Data display / input area

Play ISO

Meas O1

A1 A2 A3

Start B1 A1-A2 228.2px

ClearAll

Guide XY

- 1 Set the reference when the length of the object to be measured is determined.
 - An example draws the straight line of A1-A2 according to the diameter of the melon of a picture.
 - Tap the data display / input area.

A1-A2
Now: 228.2px

20cm

Cancel OK

- 2 Enter numbers and units
 - In the example, enter the number as the diameter of the melon is 20 cm and tap "OK".
 - The values and units entered in the image are reflected. This also allows you to measure the size of objects in other images (but only for objects of the same depth).

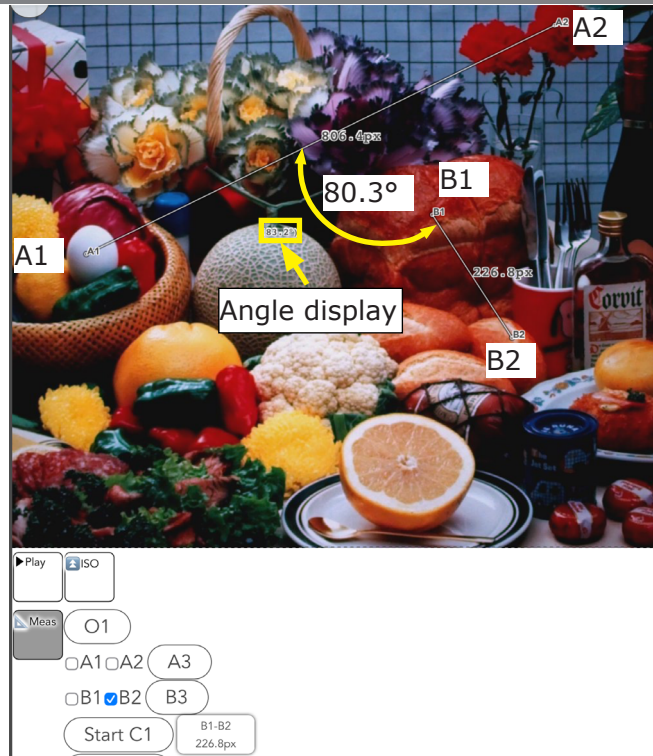


Draw 2 lines with 3 points and measure the inside angle



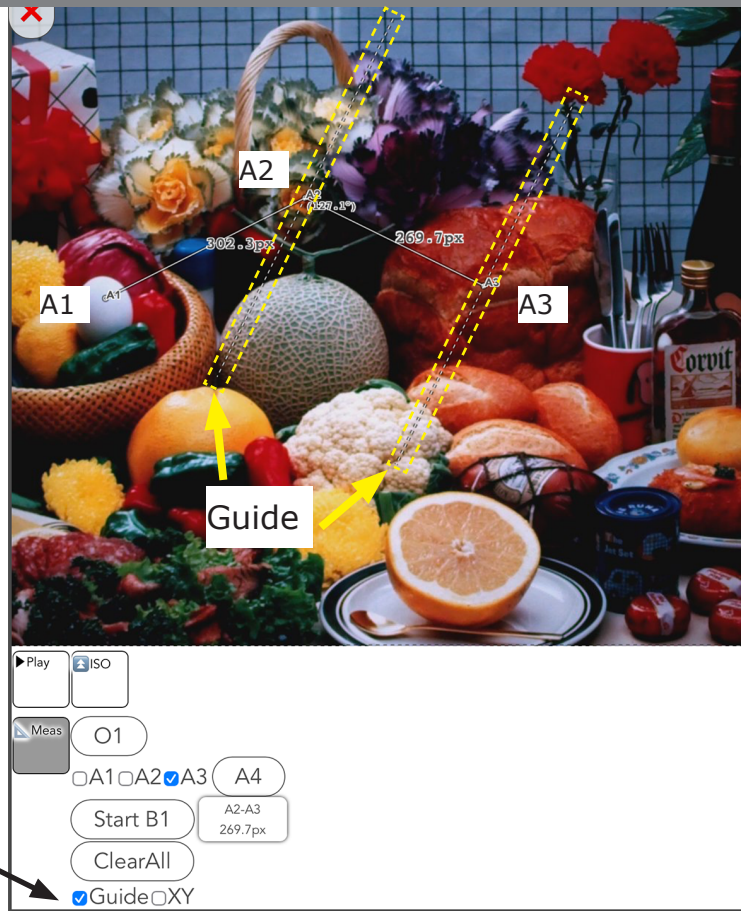
- 1 Following A2, when A3 is set, a line connecting the two points is drawn. The interior angles of the two lines A1-A2 and A2-A3 are displayed.

Measure the angle between 2 lines (4 points)



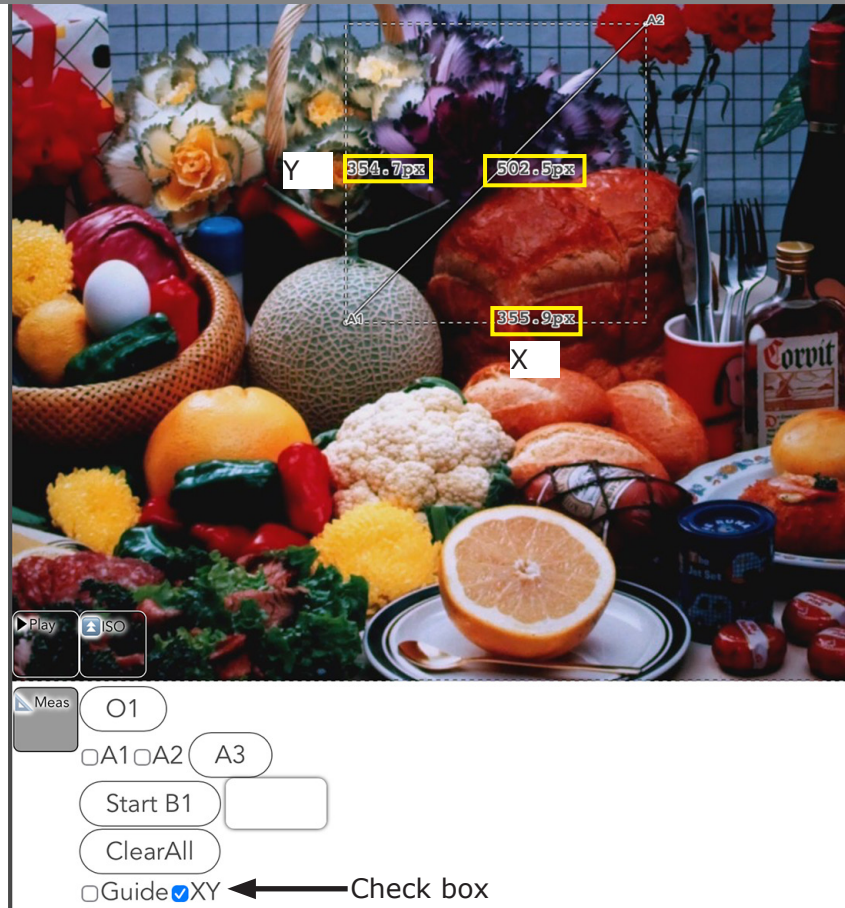
- 1 If A1-A2 is followed by B1-B2, two lines and their inner corners are drawn

Guide



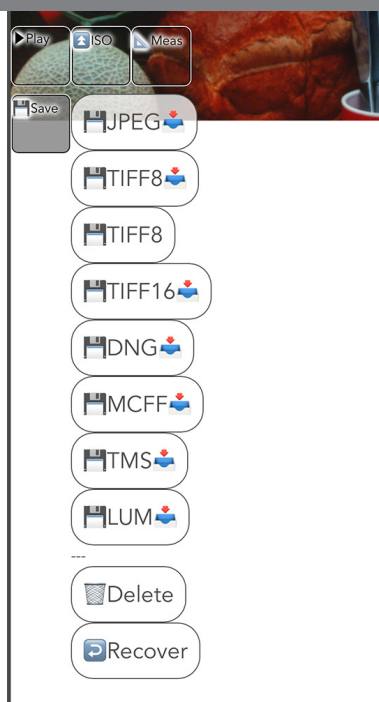
Check box









- 1 By selecting the "Guide" check box, a guide will appear perpendicular to the line segment at the two drawn points.
When drawing a line segment with three or more points, a guide is displayed on the line segment connecting the selected point and the previous point. In the example, A3 is selected, so the guide is displayed on the A2-A3 line segment.
Line segments can be drawn on the diameter of a circle and used as tangents to the circle to support measurement.





- 1 By selecting the "XY" checkbox, the length of the drawn line segment is separated into the horizontal and vertical components of the screen.
 - The values in the X direction (screen horizontal direction) and Y direction (screen vertical direction) are the lengths corresponding to the values set in "Setting the Reference Length".
 - In the example, the standard length is not set.
 - *The value is 100% of the width degree of the entire screen (web page).

Save



Button	Function
	JPEG
	TIFF8
	TIFF8
	TIFF16
	DNG
	MCFF
	TMS
	LUM

	Delete
	Recover
	Save JPEG sequentially numbered images together in ZIP format.
	8-bit TIFF (monochrome) sequentially numbered images are saved together in ZIP format.
	8bit TIFF (monochrome) sequentially numbered images are saved together in a folder. Only "external USB storage connected to the camera" can be used for storage.
	Save a batch of non-quality adjusted 16-bit TIFF sequentially numbered images in ZIP format.
	Outputs unquality-adjusted 12-bit RAW data in DNG format.
	Outputs a MCFF file in the video file format dedicated for MEMRECAM.
	Output frame data to CSV file.
	Outputs luminance summation data to a CSV file.
	Delete the video image. Check and save data before tapping.
	Restore deleted images in memory. Restore is effective when images are still in the camera's memory.

The image data can be saved to "external USB storage connected to the camera" or to "the tablet or PC on which the camera is operating".

Save to an external USB storage device connected to the camera.



Save to the tablet or PC on which the GO-Touch is operated.



Attention

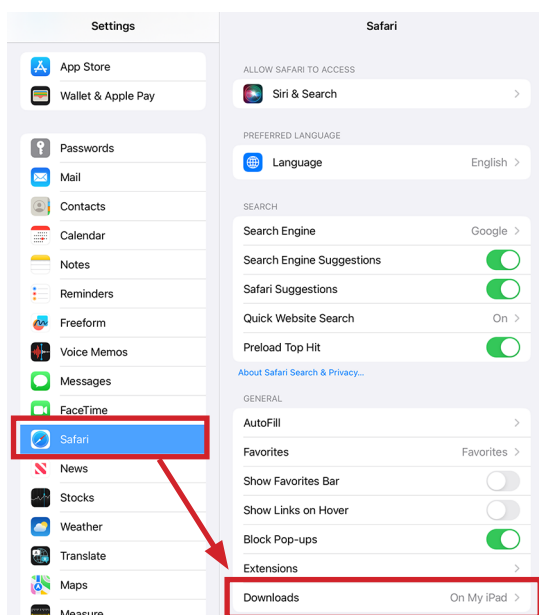
- When downloading images and videos to tablets and other devices, please be careful to have enough free space on external USB storage devices.
 - Recovery may result in loss of data, etc.
 - To play MCFE files, use our application MLink.
 - TIFF16 files cannot be opened in MLink.
- TIFF16 files can be displayed using image editing software such as Adobe Photoshop.

Note the download destination setting in the browser.

The PC or tablet may be set to save downloaded data to cloud service storage.
Examples: Apple's iCloud, Google's Google Drive, Microsoft's OneDrive, etc.

If downloading is not possible due to a space problem or internal environment, change the data storage

Setting example) Apple iPad (iPad OS)



(1) Select "Safari" from the "Settings" menu.

(2) "Downloads" allows you to set the download destination.

"On My iPad" is downloaded to the iPad itself.



The actual setting screen may differ from the description depending on the OS version of the tablet or other device.

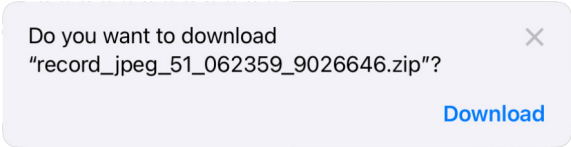
For details, please refer to the user's manual of the tablet or other device.

About the output file

JPEG/TIFF16

Outputs all image files in the specified range as a single ZIP file.

The image files are available when the ZIP file is extracted on a tablet or PC.



Example.)

Display for saving a JPEG to the tablet that is operating the camera.

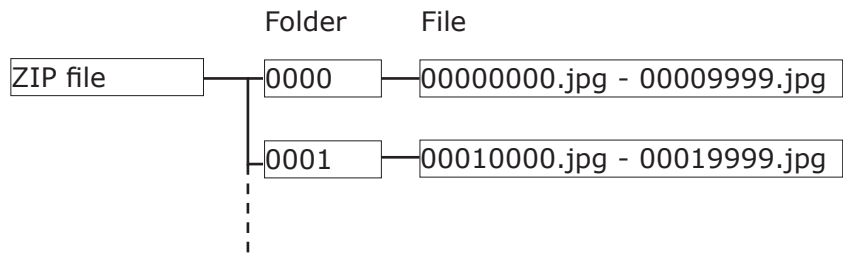
Name	Size	Date	File Name
00000000.jpg	157 KB	2/21/2023 6:54 PM	
00000001.jpg	158 KB	2/21/2023 6:54 PM	
00000002.jpg	158 KB	2/21/2023 6:54 PM	
00000003.jpg	157 KB	2/21/2023 6:54 PM	
00000004.jpg	156 KB	2/21/2023 6:54 PM	
00000005.jpg	155 KB	2/21/2023 6:54 PM	
00000006.jpg	155 KB	2/21/2023 6:54 PM	
00000007.jpg	154 KB	2/21/2023 6:54 PM	
00000008.jpg	153 KB	2/21/2023 6:54 PM	
00000009.jpg	152 KB	2/21/2023 6:54 PM	
00000010.jpg	157 KB	2/21/2023 6:54 PM	
00000011.jpg	158 KB	2/21/2023 6:54 PM	

JPEG will be a sequentially numbered file starting from "00000000.jpg".

TIFF16 files are sequentially numbered from "00000000.tif".

The maximum number of files in the same folder is 10,000.

If there are more files than that, they are saved in a separate folder.



Example of folder structure of a file

MCFF

This is a video format file exclusively for the MEMRECAM series. It can be saved without image processing and can be used for analyzing phenomena.

To playback the file, use a dedicated application such as MLink.

TMS

Frame information data is output as a CSV file; please use an application that can display CSV format files.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK		
1	FRMN	FRMR	LUMR	LUMA	TRI1	SY11	TRI2	SY12	AG16	ACCX	ACCY	ACCZ	GYRX	GYRY	GYRZ	IM16	ISOS	LN16	LNAV	SYNM	SYNS	FRAM	FRMS	EXPT	HDRT	FSYD	FSHM	RC16	FC32	ESVD	IRLK	BOOS	TRCF	TRPF	TRVD	TRHM	TRGS	
2	-6335	-6.33555	-0.21381	-24.4617	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.021	45	15.021	0.000467	0.000467	0	0.00	50	42967	0	0	1	0	0				
3	-6335	-6.33555	-0.21381	-24.4619	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.022	45	15.022	0.000467	0.000467	0	0.00	50	42968	0	0	1	0	0				
4	-6334	-6.33455	-0.21383	-24.4642	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.023	45	15.023	0.000467	0.000467	0	0.00	50	42969	0	0	1	0	0				
5	-6333	-6.33355	-0.21378	-24.4589	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.024	45	15.024	0.000467	0.000467	0	0.00	50	42970	0	0	1	0	0				
6	-6332	-6.33255	-0.21379	-24.4546	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.025	45	15.025	0.000467	0.000467	0	0.00	50	42971	0	0	1	0	0				
7	-6331	-6.33155	-0.21376	-24.4558	0	1	0	1	25012	-0.0317	-0.9951	-0.0254	0.38	0.62	-0.79	24966	5761	1	2	45	15.026	45	15.026	0.000467	0.000467	0	0.00	50	42972	0	0	1	0	0				
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Parameters	Description
FRMN	Frame number
FRMR	Frame relative time (trigger detection time = 0)
LUMR	Average of the luminance levels of pixels in the specified area (0.0 is black, 1.0 is white, and out of range corresponds to blocked up shadows or blown out highlights)
LUMA	Average of absolute luminance of pixels in the specified area (luminance value not affected by shutter speed, etc.)
TRI1	Trigger signal level (0: no signal, 1: with signal)
SY11	External sync signal level (0: no signal, 1: with signal)
TRI2	Not used
SY12	Not used
AG16	Number of accelerometer/gyro sensor value updates (repeated within 16-bit range)
ACCX	X Axis Acceleration [G] Positive number when accelerating to the right of the rear panel (approx. "-1" when the rear panel is installed at 90 degrees clockwise)
ACCY	Y Axis acceleration [G] Positive number when accelerated to the lower surface direction (approx. "-1" when installed horizontally)
ACCZ	Z Axis Acceleration [G] Positive number when accelerating towards the front panel (Approx. "-1" when pointing directly upward)
GYRX	Angular velocity of X axis [degree/sec] Positive number when the unit is pointed up (tilt up)
GYRY	Angular velocity of Y-axis [degree/sec] Positive number when the unit is turned to the right (right pan)
GYRZ	Angular velocity of Z-axis [degree/sec] Positive number when the unit is tilted to the right (right roll)
IM16	Number of times the image processing value is updated (repeated within a 16-bit range)
ISOS	ISO sensitivity
LN16	Not used
LNAV	Not used

PLAY

Parameters	Description
SYNM	Synchronization signal time [min].
SYNS	Synchronization signal time [sec].
FRMM	Exposure start time [min].
FRMS	Exposure start time [sec].
EXPT	Exposure time [sec]
HDRT	Not used
FSYD	Not used
FSHM	Not used
RC16	Number of recordings (repeated within 16-bit range)
FC32	Frame counter (repeats in 32-bit range)
E2ND	Not used
IRLK	Synchronized with IRIG signal. (0: not synchronized, 1: synchronized)
BOOS	Not used
TRCF	Trigger signal detection (0: No signal, 1: With signal)
TRPF	0: This frame trigger frame 1: Trigger frame is one previous frame
TRYD	Trigger time [day].
TRHM	Trigger time [hour:minute].
TRGS	Trigger time [sec].

LUM

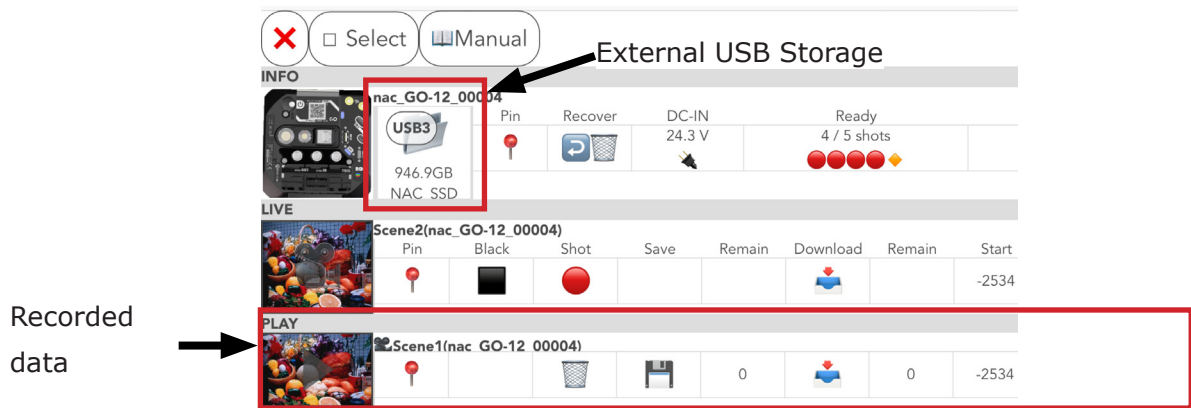
The brightness sum of the frame is outputted as a CSV file. Use an application that can display CSV format files.

	A	B	C
1	FRMN	LUMR	LUMA
2	-6336	-0.21381	-24.4617
3	-6335	-0.21381	-24.4619
4	-6334	-0.21383	-24.4642
5	-6333	-0.21378	-24.4585
6	-6332	-0.21375	-24.4545
7	-6331	-0.21376	-24.4558

Parameters	Description
FRMN	Frame number
LUMR	Average of the luminance levels of pixels in the specified area (0.0 is black, 1.0 is white, and out of range corresponds to blocked up shadows or blown out highlights)
LUMA	Average of absolute luminance of pixels in the specified area (luminance value not affected by shutter speed, etc.)

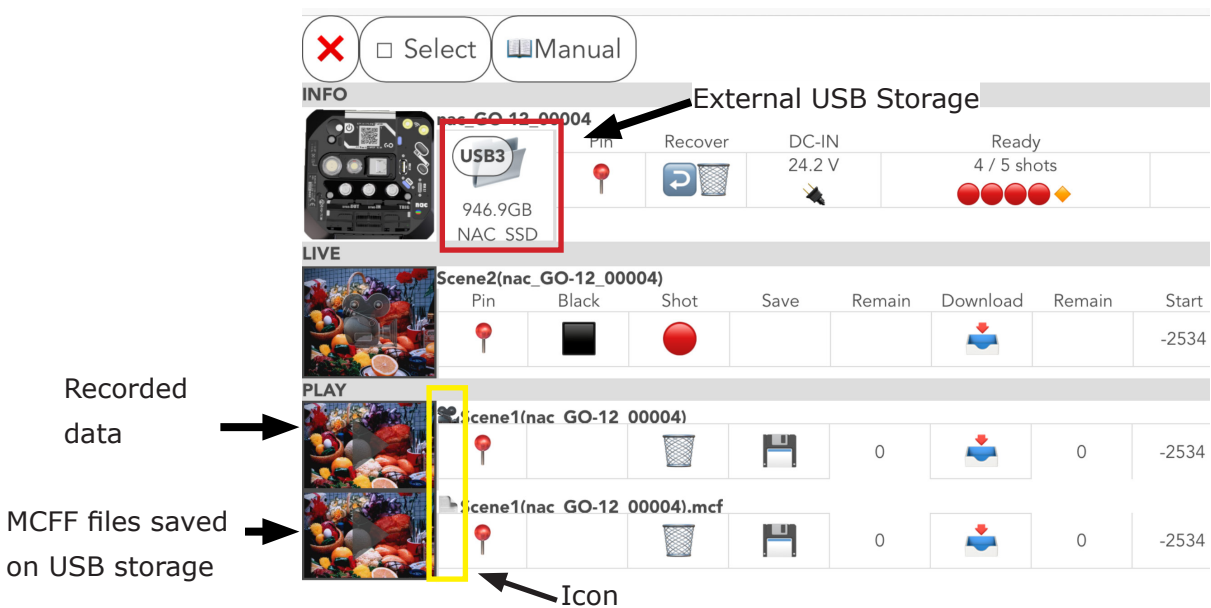
External USB Storage

Save recorded video to an external USB storage device connected to the camera. Saved MCFF files can also be played back.



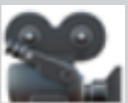

MENU screen

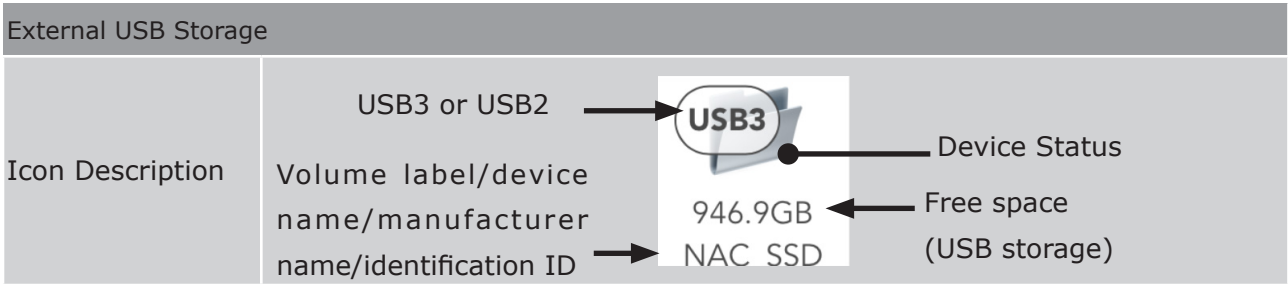
When the camera has recorded data and an external USB storage device is connected to the camera




MENU screen

If the camera has recorded data and MCFF files are stored on an external USB storage device.

	Icon	File name
Data recorded by the camera		Example: Scene1 (nac GO-12 0004)
MCFF files saved on USB storage		Example: Scene1 (nac GO-12 0004).mcf

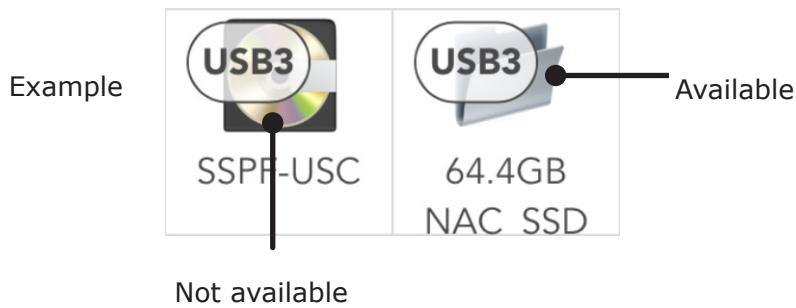


Icon				
Operation	Works as USB 3	Works as USB 2	Works as USB 3	Works as USB 3
Data can be saved.	OK	OK	NG	NG
Press EJECT to remove	Necessary	Necessary	unnecessary	unnecessary
Device Status	Available for use.	Available for use.	The device needs to be reconnected.	Initialization work is required on a PC or other device.
Icon				
Operation	Works as USB 3	Works as USB 2		
Data can be saved.	NG	OK		
Press EJECT to remove	unnecessary	Necessary		
Device Status	The device needs to be reconnected.	Available for use.		

 Attention Some external USB storage devices have different writing speeds, which may affect the recording time. Check the specifications and performance of the external USB storage device before connecting it to the camera. If a USB 3.0 storage device is connected to the camera's USB2 connector, the transfer rate will be limited to the USB2 standard.

Some external USB storage devices may display two icons for one device, as shown in the example.

In this case, the right icon can be used to save, remove, or display capacity.





Connecting and Disconnecting Storage

Note before connecting

Do not connect the camera with the following files in the root folder of the USB storage device. The camera may freeze when connected.

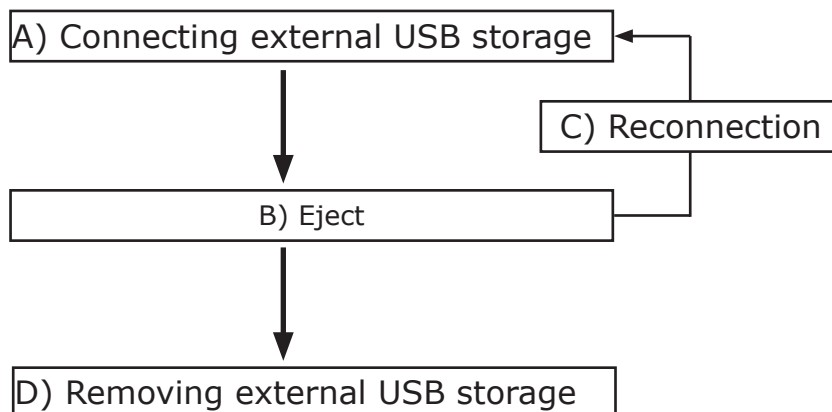
<Files that should not be placed in the root folder>.

MCFE files taken with our MEMRECAM series other than the GO series
(Files with the extension ".MCF")

<In case of freeze>

- (1) Turn off the external power supply and disconnect the USB storage device.
- (2) Move the relevant files from the USB storage device and reconnect it to the camera.
- (3) Turn on the external power supply and start up the camera again.

Connection and Disconnection Flow



What is Eject?

Eject is an internal process that removes the external USB storage device from the camera.

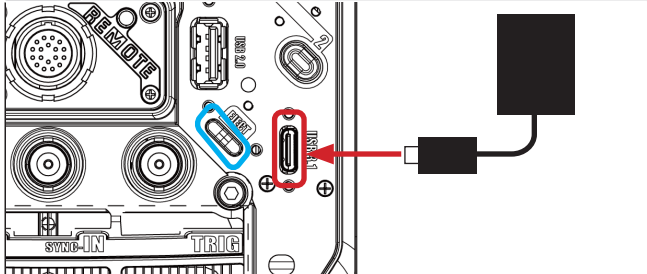

Please execute it before removing the external USB storage.

If Eject is executed during storage, the storage will be canceled.



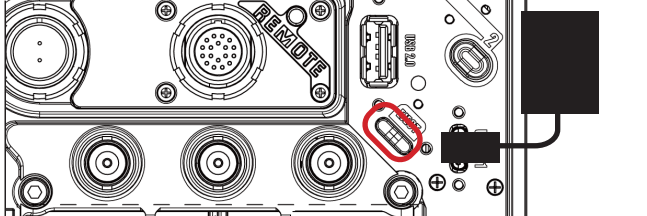

Attention The free space display of the external USB storage device is retrieved at the time of connection. Please reconnect to update the data.


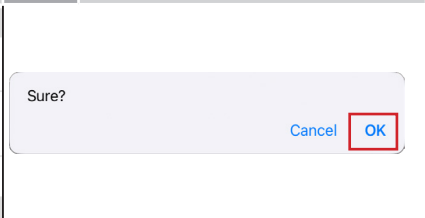

A) Connecting external USB storage

<p>1 Connect an external USB storage device to the camera's USB 3.1 connector. EJECT BTN & LED will light up.</p>	<p>2 The connected storage is displayed in the GO-Touch's INFO and its status can be checked.</p>
	

(B) EJECT


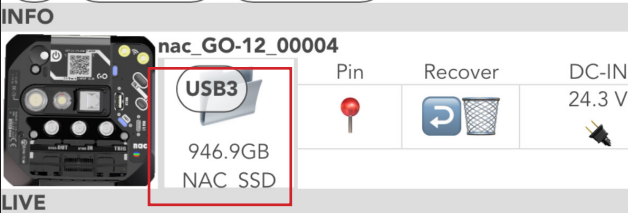
There are two ways to press EJECT BTN & LED or tap the INFO icon.

Press EJECT BTN&LED	
<p>Press EJECT BTN & LED on the camera to turn off the LED.</p>	<p>Tap EJECT BTN & LED on the rear panel of GO-Touch INFO to turn off the LED.</p>
	

Tap the INFO external USB storage icon.		
<p>1 Tap the INFO external USB storage icon.</p>	<p>2 A confirmation message will appear. Tap OK.</p>	<p>3 The external USB storage icon changes and cannot be saved.</p>
		

C) Reconnection

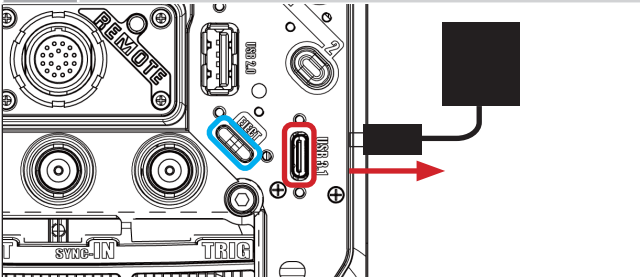
Reconnect the ejected external USB storage device to the camera.

1	Tap the INFO external USB storage icon.	2	The external USB storage icon will change and connect to the camera again. EJECT will light up.
			

 Attention Pressing EJECT BTN & LED on rear panel does not reconnect.

D) Removing external USB storage

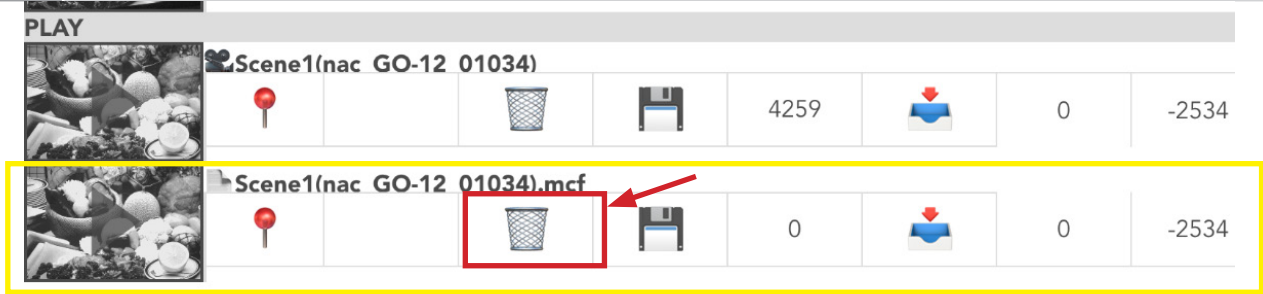
1	Check that the EJECT BTN & LED is lit, then remove the external USB storage device from the USB 3.1 connector.
---	--



Delete storage recordings from PLAY list

Delete recorded files stored in storage from PLAY's display list.

- 1 Tap the trash can icon on the recording that appears in the PLAY list.



- 2 The recorded file is deleted from the PLAY list.

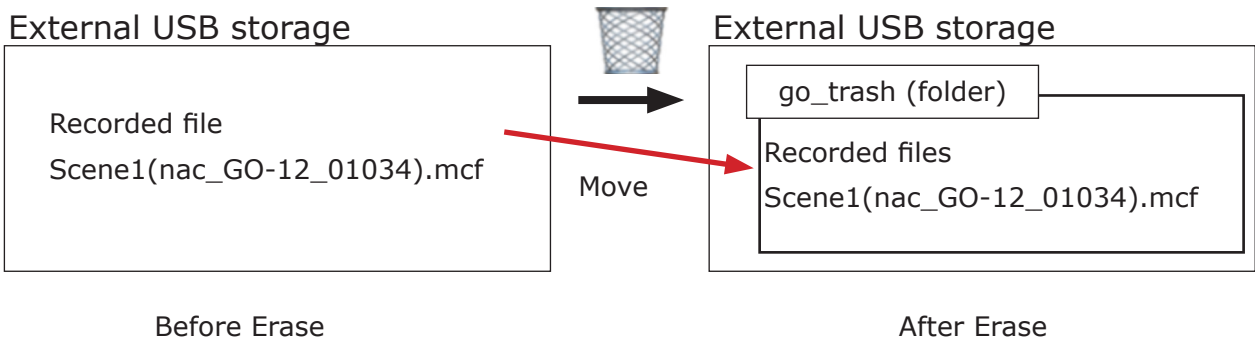


About deleted files

Deleted recorded files are automatically created and moved to a folder named "go_trash" in the storage.

Please note that this operation does not delete files in the storage, and therefore does not increase the free space in the storage.

Moving files in storage during erasure (file names are examples)



How to return deleted files to the PLAY list

The camera (GO-Touch) cannot return files in storage to the root directory.

Please connect the storage to your PC and move files from the "go_trash" folder to the root directory.

Lighting device control function

Lighting devices and cameras can be controlled from the GO-Touch by connecting them to a wired LAN on the same network.

Supported Lighting Equipment

Supports Art-Net 4.

Supports Internet browser control by entering IP address.

Models that can be controlled by "http:// (lighting equipment IP address)".

Lighting equipment that has been tested for operation

The following lighting devices have been tested and confirmed to work by our company. (January 2024)

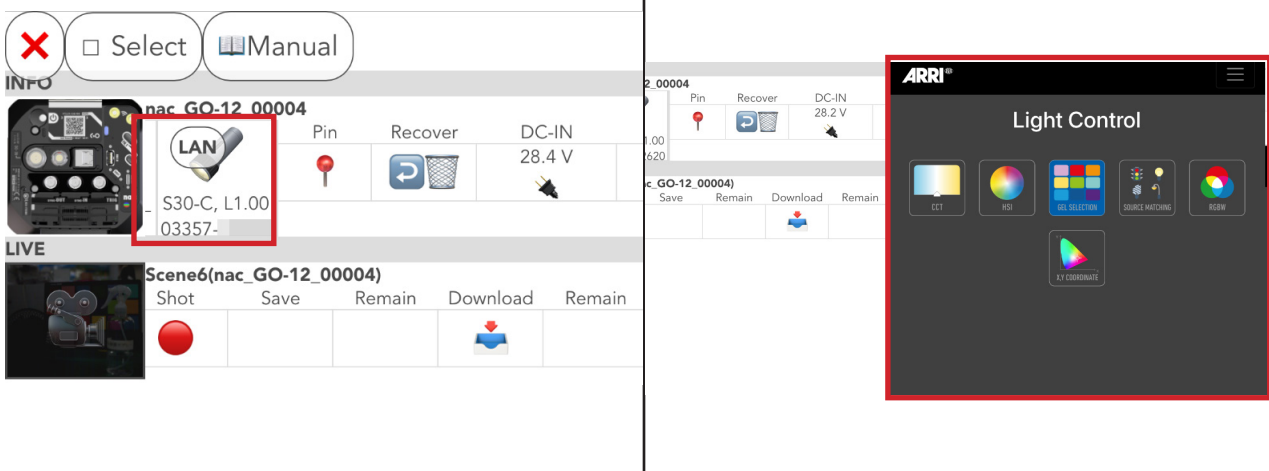
Manufacturer	Product name
ARRI	SkyPanel

Lighting device setting display

Example: When using ARRI's SkyPanel

(1) A lighting icon appears on the MENU when lighting devices are connected to the same network.

(2) Tap the lighting icon to display the screen for setting up the ARRI SkyPanel.



It may take some time until the setting screen of the lighting equipment appears. For more information on how to use the lighting equipment, check the product manual, etc., and contact the lighting equipment distributor.



4

Specification

Image sensor.....	126
Recorder	130
System Control	132
Connector.....	140
Shape, environment, precision, standards, disposables, dimensional drawings.....	152
Main Accessories, Options.....	154

Image sensor

Image sensor (common specs)

Format	About 1.4 inch CMOS sensor (monochrome, color)
Pixel size	4.5 μ m x 4.5 μ m
Valid Pixels	4,608 x 2,176 pixels (10,000,000 pixels)
Maximum Area	20.736 x 9.792 mm
Optical Axis Center Accuracy	\pm 0.5 mm

Sensitivity

Mono	ISO 400 to 12,500
Color	ISO 100 to 3,200



Frame Rates and Valid Pixels GO-4K (1/3)

Maximum Frame Rate (fps)	Valid Pixels		Valid Image Area (mm)		Horizontal-Vertical Ratio (Size)
	Horizontal	Vertical	Horizontal	Vertical	
1,000 or less	4608	2176	20.736	9.792	Split
	2176	2176	9.792	9.792	1:1
	4096	2160	18.432	9.72	DCI 4K
	3840	2160	17.28	9.72	4K UHD
	4608	2048	20.736	9.216	Split
	4096	2048	18.432	9.216	2:1
	2048	2048	9.216	9.216	1:1
	1920	1080	8.64	4.86	FHD (Full HD)
	4608	1056	20.736	4.752	Split
	1920	1056	8.64	4.752	Split
	1408	1056	6.336	4.752	4:3
1,250	4608	1728	20.736	7.776	Split
	2048	1728	9.216	7.776	Split
	1920	1080	8.64	4.86	FHD (Full HD)
1,500	4608	1408	20.736	6.336	Split
	2048	1408	9.216	6.336	Split
	1920	1080	8.64	4.86	FHD (Full HD)
2,000	4608	1056	20.736	4.752	Split
	2048	1056	9.216	4.752	Split
	1408	1056	6.336	4.752	4:3
	4608	992	20.736	4.464	4:3
	1200	800	5.4	3.6	3:2
	640	480	2.88	2.16	VGA (4:3)
2,500	4608	800	20.736	3.6	Split
	2048	800	9.216	3.6	Split
	1200	800	5.4	3.6	3:2
	640	480	2.88	2.16	3:2



• Fps (frame per second) is the unit of recording speed = frame / second.

• 1,000 or less includes 10, 50, 60, 100, 120, 250, 500 fps.

Frame Rates and Valid Pixels GO-4K (2/3)

Maximum Frame Rate (fps)	Valid Pixels		Valid Image Area (mm)		Horizontal-Vertical Ratio (Size)
	Horizontal	Vertical	Horizontal	Vertical	
3,000	4608	672	20.736	3.024	Split
	4608	640	20.736	2.88	Split
	2048	640	9.216	2.88	Split
	1136	640	5.112	2.88	Split
	856	640	3.852	2.88	Split
	512	512	2.304	2.304	1:1
	856	480	3.852	2.16	Split
	640	480	2.88	2.16	VGA (4:3)
4,000	4608	480	20.736	2.16	Split
	2048	480	9.216	2.16	Split
	856	480	3.852	2.16	Split
	640	480	2.88	2.16	VGA (4:3)
	640	352	2.88	1.584	Split
	480	352	2.16	1.584	Split
5,000	4608	352	20.736	1.584	Split
	2048	352	9.216	1.584	Split
	640	352	2.88	1.584	Split
	480	352	2.16	1.584	Split
6,000	4608	288	20.736	1.296	Split
	2048	288	9.216	1.296	Split
	768	288	3.456	1.296	Split
	768	256	3.456	1.152	3:1
9,000	4608	160	20.736	0.72	Split
	2048	160	9.216	0.72	Split
	768	160	3.456	0.72	Split
10,000	4608	128	20.736	0.576	Split
	2048	128	9.216	0.576	Split
	768	128	3.456	0.576	Split
13,000	4608	96	20.736	0.432	Split
	2048	96	9.216	0.432	Split
	768	96	3.456	0.432	Split



Frame Rates and Valid Pixels GO-4K (3/3)

Maximum Frame Rate (fps)	Valid Pixels		Valid Image Area (mm)		Horizontal-Vertical Ratio (Size)
	Horizontal	Vertical	Horizontal	Vertical	
16,000	4608	64	20.736	0.288	Split
	2048	64	9.216	0.288	Split
	768	64	3.456	0.288	Split
20,000	4608	32	20.736	0.144	Split
	2048	32	9.216	0.144	Split
	768	32	3.456	0.144	Split

Shutter

Shutter Format	Global electronic shutter
Method for setting the shutter Time	Select from presets / set custom
Presets	OPEN, 1/100, 1/250, 1/500, 1/1,000, 1/2,000, 1/5,000, 1/10,000, 1/20,000, 1/50,000, 1/100,000, 1/200,000, 1/333,333, 1/500,000
Custom Settings	1.1 to 100,000 μ s (= 100ms = 1/10s) Exposure times longer than 1/frame rate cannot be set
Automatic Exposure	Setting: ON/OFF Function: Automatically adjusts the exposure time between 10 μ s and the shutter speed

Lens Mount

Mount Type	F Mount
F Mount	Nikon F Mount, compatible with lenses without an aperture ring. S type, D type, and G type cannot be used with the Nikon F mount. The E type cannot be used.

Recorder

Recording Memory	
Installed Memory	16GB Model : Mounted memory capacity 17GB 32GB Model : Mounted memory capacity 34GB 64GB Model : Mounted memory capacity 68GB
Memory Segment Partitions	16GB Model 17GBx1, 8.5GBx2, 4.2GBx4, 2.1GBx8 1.0GBx16, 535MBx32, 267MBx64
	32GB Model 34GBx1, 17GBx2, 8.5GBx4, 4.2GBx8 2.1GBx16, 1.0GBx32, 536MBx64
	64GB Model 68GBx1, 34GBx2, 17GBx4, 8.5GBx8 4.2GBx16, 2.1GBx32, 1.0GBx64

Pixel Bit Length

Image Sensor Output	12 bit
---------------------	--------

Simultaneous Recording Data

Recording Trigger Mode Setting	Closed caption method
Frame Rate	Closed caption method
Frame Size	Closed caption method
Shutter Speed	Closed caption method
Recording Image Quality Settings	Closed caption method
Recording Comments	Closed caption method
Trigger Time	Closed caption method
Internal Standard Time (or IRIG-B Time)	Simultaneous Recording Method
Exposure Start Time	Simultaneous recording method, time stamp, minutes and seconds, 0.1 μ sec units
Exposure End Time	Simultaneous recording method, time stamp, minutes and seconds, 0.1 μ sec units
Frame Count	Simultaneous recording method, time stamp, memory address information
Trigger Time	Simultaneous recording method, time stamp, day/hour/min/sec, 0.1 μ sec units
Sequence Count	Simultaneous recording method, time stamp, recording sequence information
Signal Status	Simultaneous recording method, time stamp, Trigger, EST, Event, IRIG Lock, Sensor Flag bit identification
Recording Time	Simultaneous recording method, time stamp, date and time

Note) Closed caption method : Image and information recorded separately, synthesis display method, recorded in the system controller at the point of trigger input

Note) Simultaneous Recording Method recording image and information together, recorded Method: in image memory

Note) Time Stamp: Simultaneous recording data for each frame



Of the data recorded at the same time for each frame, the information that can be known by GO-Touch and MLink is as follows.

Exposure center time of the frame (date, hour, minute, second, in 0.1 μ sec)

Trigger Time (date, hour, minute, second, in 0.1 μ sec)

EVENT

IRIG lock

System Control

CAMERA MODE LED (1/2)

LED Status	Operation
Orange	<p>REC mode.</p> <p>Displays trigger detection status while the camera image is being recorded by memory. Indicates the recording status to the recording memory by changing the brightness of orange due to light and dark.</p> <p>After the trigger input, it changes from light to dark.</p> <p>The less frames remaining, the darker the orange brightness.</p>
Yellow	<p>ARM mode.</p> <p>From the time ARM is started until the time the picture is recorded for the number of frames before the trigger.</p> <p>A change in brightness due to light and dark in yellow indicates the recording status to the recording memory. Dark to Light: Indicates the lapse rate of recording for the number of frames before triggering. It turns white when recording is complete for the number of frames before triggering.</p>
White	<p>ARM mode.</p> <p>Recorded memory is discarded, and the camera image is being recorded to memory. Displays the recording status to the recording memory with the change of white brightness due to light and dark.</p> <p>The ratio of the light/dark changes varies depending on the trigger timing setting.</p> <p>Dark to Light: Indicates the lapse rate of recording for the number of frames before triggering.</p> <p>Light to Dark: Indicates the lapse rate of recording for the number of frames after triggering.</p>
Blue	<p>Recording memory is full and cannot be recorded.</p> <p>The camera is not recording video, but a live video is displayed (VIEW mode).</p>
Not lit	Power OFF or sleep state.
Flashing	<p>Set to EST mode, and EST pulse is input.</p> <p>However, only ARM mode and REC mode. Flashing by alternately turning on and off.</p>

**CAMERA MODE LED (2/2)**

LED Status	Operation
Flashing green (approximately 1 second cycle)	Waiting to save to external USB storage device. Saving to an external USB storage device has started, but is not yet complete because the external USB storage device is not connected. Check the connection status of the external USB storage device.
Flashing red pulse (approximately 1 second cycle)	Time signal detected (time synchronization not completed).
Flashing Green pulse (approximately 1 second cycle)	Time signal is detected (time synchronized).

PWR BTN & POWER LED (LED and button in one) (1/2)

LED Status	Camera's power status	Operation
Flashing white	Power on	Camera is activated.
White	Power on	Camera starts up and is in normal status.
Flashing red (1 Second interval)	Power on	Fail (abnormal) state.
Orange	Power off	External power is being supplied and the camera is turned off with the power switch. The external power supply voltage is within the specification range (13 to 32V) and in normal condition.
Flashing red (0.5 Second interval)	Power off	External power is being supplied and the camera is turned off with the power switch. The external power supply voltage is outside the specified range (13 to 32V) and is abnormal.
Flashing orange (1 Second interval)	Power on	From the moment the power is pressed until the power is turned OFF.
Flashing orange 2-second cycle (Lit for 1.5 sec, off for 0.5 seconds)	Power on	Sleep state.
Yellow	Power on	RESET button is pressed (maximum duration: approx. 1.9 sec.).
Flashing blue (1 Second interval)	Power on	The status between the camera's power ON and the camera's startup. Camera is rebooting.
Flashing green (1 Second interval)	Power on	Factory reset in progress.

PWR BTN & POWER LED (LED and button in one) (2/2)

LED Status	Camera's power status	Operation
Not lit	Power off	No external power supply.
Red and green alternating lights		Thermal shutdown occurs.

Operation	Function
Short press	Turns the camera power on and off.
	The camera goes from the ON state to the sleep state.
	The camera goes from sleep status to power on status.
Long press	Forces the camera power from the ON state to the OFF state.



Attention

- All images recorded in the camera's memory will be lost if the power is turned off, thermal shutdown occurs, or the camera goes to sleep.



CHECK

- Thermal shutdown automatically shuts down the camera when the internal temperature becomes extremely high.
 - If a thermal shutdown occurs, turn off AC adapter or remove the battery, turn off the power to the camera, and then turn it on again to restart.
 - The fail status means that one of failure detection, power supply voltage abnormality detection, sensor temperature rise detection, trigger signal abnormality detection, or setting abnormality detection has occurred during camera activation.

ETHERNET LED

LED Status	Operation
Yellow-green	Linking in 1000BASE-T.
Orange	Linking in 100BASE-TX.
Not lit	Not connected to network or powered off.

EJECT LED & BTN (LED and button are integrated)

LED Status	Operation
Flashing Blue	The camera is recognizing the connected device.
Yellow-green	External USB storage connected to USB2.0 connector. Ready for storage. USB3.1 connector with external USB storage device not compatible with USB3. Ready for storage.
White	USB3 capable external USB storage-attached to USB3.1 connector. Storable status.
Flashing green (Low speed)	Data storage to the external USB storage started, but USB storage is not connected and the storage is waiting to be saved. Blinks in synchronization with CAMERA MODE LED.
Flashing green (High speed)	Data-saving to external USB storage. (Common to USB3.1 and USB2.0 Connectors)
Not lit	Removable external USB storage. No external USB storage-connected. Unavailable external USB storage connectivity status (Format USB storage).
Operation	Function
Press the button	Removing external USB storage.



EPAPER BTN & LED (LED and button are integrated)

LED Status	Operation
White	EPAPER BTN is pressed.
Not lit	EPAPER BTN is not pressed.

Operation	Function
Press the button	Switching e-paper display

e-paper

E-paper on the back displays camera information and a QR code for Wi-Fi connectivity

Wi-Fi adapter frequency band

IP address of the camera's
wired LAN

QR Code

Current display contents







Number of tablets and PCs
connected to the camera via
Wi-Fi adapter

The content of the e-paper display switches automatically depending on the camera status. Also, each time EPAPER BTN is pressed, the display switches sequentially from HELP → W-Fi → GO-Touch → HELP ... and so on.



Attention

When the camera is turned off, the display does not change even if EPAPER BTN is pressed.

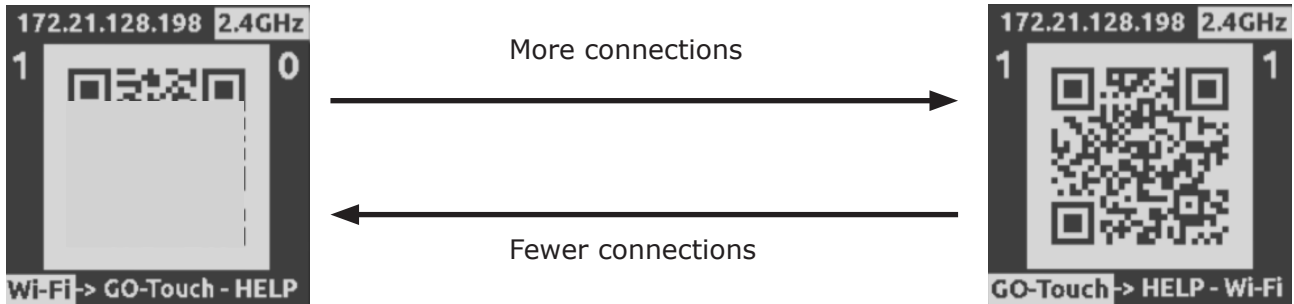
Display order	Display Contents	QR Code	Description.	Display Conditions
1	HELP		A link to the MEMRECAM GO product introduction page on our website will be displayed.	When the camera is turned off.
2	Wi-Fi		This display appears when the Wi-Fi adapter is not recognized.	When the camera has been successfully started up. If the Wi-Fi adapter is not recognized
			<p>A link to connect to the camera via Wi-Fi will appear.</p> <p>Since the SSID and password are embedded in the QR code, simply read the QR code to connect to the camera.</p> <p>The figure on the left is a sample, so part of the code is hidden to prevent connection.</p>	<p>When a Wi-Fi adapter is connected and recognized</p> <p>When automatic transition is made from Display 3</p>
3	GO-Touch		<p>Address for starting GO-Touch. The address for starting GO-Touch is displayed.</p> <p>When the QR code is scanned, a web browser will be launched to access GO-Touch.</p>	When automatically transitioning from Display 2

Automatic display 2 and display 3 transitions

Display 2 and 3 will automatically switch according to changes in the number of terminals connected wirelessly to the camera connected to the Wi-Fi adapter.

When a terminal connects to the camera using the QR code in Display 2, the display switches to Display 3.

When the number of devices connected to the camera via Wi-Fi decreases, the display changes to 2.



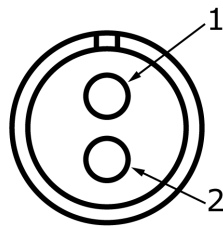
Connector

DC-IN Connector

Application	DC IN
Model	LEMO EEG.2B.302
Compatible Plug	LEMO FGG.2B.302
Power Voltage	DC 13 to 32V
Input power	DC power (e.g. AC adapter or battery)
Power Consumed	About 66.7W 12000 pps, ARM mode, full resolution, 24 VDC, peripheral devices not connected)
Power Protection	Reverse polarity: Built-in protection IC
	Overvoltage: Shutdown at 34.5 VDC with built-in protection IC

Pin Configuration

Pin No.	Name	Direction	Function • Input/Output Level	Notes
1	DC24V IN	IN	DC input	
2	DC24V RTN	IN	DC return	
shell	FRAME GND	-	Frame ground	



Pin Configuration Figure (from the side of the engaged connector)



REMOTE Connector

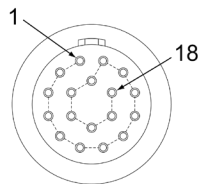
Application	Branched input/output with GX-HUB, or J3 cable	
Model	LEMO EEG.3B.318	
Compatible Plug	LEMO FGG.2B.318	
ETHER	1000 BASE - T (IEEE 802.3 ab), DHCP compatible, insulation	
EST2 IN	Signal level:	TTL level, 5 V pull-up resistor 4700 Ω , insulation L level: -0.5 VDC (minimum applied voltage) to 0.5 VDC H level: 2VDC to 5.5VDC (maximum applied voltage)
	Function:	Set to EST mode and start exposing with this input H \rightarrow L during ARM or REC mode to take one image. Contact input possible. Input type selectable. Digital filter configurable. There is a polarity inversion function. Synchronization accuracy less than 50 ns.
IRIG-B IN	Signal level:	3 Vpp (1 to 10 Vpp), high impedance, isolation transformer input
	Standard	IRIG Standard 200-98
TRIG2 IN	Signal level:	Current loop by photo coupler, insulation Current limiting resistance 1500 Ω , maximum applied voltage a 32 V
	Function:	Trigger enabled at 5V or more. Digital filter configurable. There is a polarity inversion function.
PWRCNT IN	Signal level:	CMOS level, 5 V pull-up resistor 4700 Ω , insulation. L level: -0.5 VDC (minimum applied voltage) to 1.5 VDC, H level: 3.5 VDC to 5.5 VDC (maximum applied voltage)
	Function:	Power on at H, Power off at L. No polarity reversal function.



- GO-4K does not support EPO output from the REMOTE connector.

Connector

Pin No.	Name	Direction	Function • Input/Output Level	Remarks
1	MDI 0+	I/O	10/100/1000BASE-T Interface	
2	MDI 0-	I/O	10/100/1000BASE-T Interface	
3	MDI 1+	I/O	10/100/1000BASE-T Interface	
4	MDI 1-	I/O	10/100/1000BASE-T Interface	
5	MDI 2+	I/O	10/100/1000BASE-T Interface	
6	MDI 2-	I/O	10/100/1000BASE-T Interface	
7	MDI 3+	I/O	10/100/1000BASE-T Interface	
8	MDI 3-	I/O	10/100/1000BASE-T Interface	
9	EST2 IN	IN	TTL or contact	Isolation
10	EST2 IN RTN	IN	TTL or contact	Ground isolation
11	IRIG-B IN	IN	High impedance	Isolation transformer
12	IRIG-B IN RTN	IN	High impedance	Isolation transformer
13	TRIG2 IN A	IN	Current loop, anode	Isolation
14	TRIG2 IN C	IN	Current loop, cathode	Isolation
15	EPO	OUT	CMOS	Isolation
16	EPO RTN	OUT	CMOS	Ground isolation
17	PWRCNT IN	IN	CMOS or contact	Isolation
18	PWRCNT IN RTN	IN	CMOS or contact	Ground isolation
shell	FRAME GND	-	Frame ground	



Pin layout diagram (From connector mating side)

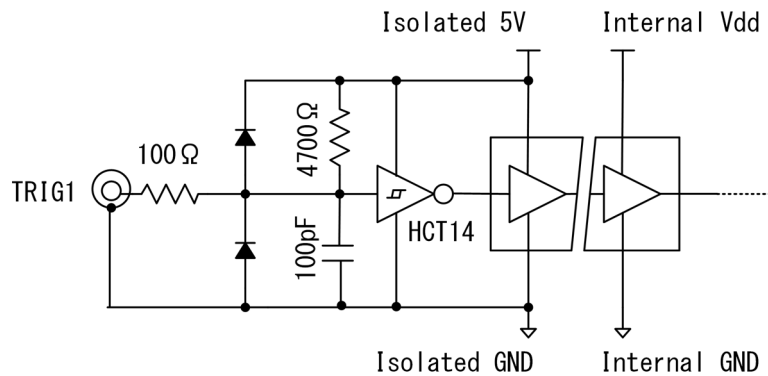
TRIG connector

Application	TRIG1 trigger signal input
Model	BNC receptacle R132-002612000
Compatible Plug	BNC plug
TRIG1 Input	Signal Level TTL level, 5V pull-up resistor 4700 Ω, isolation L level: -0.5V (min. applied voltage) to 0.5V H Level: 2V to 5.5V (max. applied voltage)
	Function Trigger valid in H to L. Contact input possible. With polarity inversion function

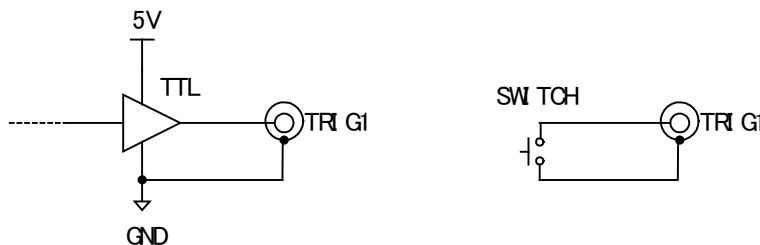
Pin Configuration

Pin No.	Name	Direction	Function • Input/Output Level	Notes
1	TRIG1 IN	IN	TTL, contact point	Isolation
Shell	TRIG1 IN RTN	IN	TTL, contact point	Ground insulator

Camera side interface circuit



Recommended trigger interface circuit



SYNC-IN connector

Application	EST/IRIG-DCLS input (select one)
Model	BNC receptacle R132-002612000
Compatible Plug	BNC plug
Signal Level	TTL level, 5V pull-up resistor 4700 Ω , isolation L level: -0.5V (min. applied voltage) to 0.5V H Level: 2V to 5.5V (max. applied voltage)
EST function	Set the camera to EST mode and start exposure at H to L of this input to record a single image. Contact input possible. With polarity inversion function Synchronous precision of 40nS or less When inputting EVENT, the signal-level is recorded together with the image.
IRIG function	The time is synchronized as a IRIG-B DCLS.

Pin Configuration

Pin No.	Name	Direction	Function • Input/Output Level	Notes
1	SYNC-IN	IN	TTL, contact point	Isolation
Shell	SYNC-IN RTN	IN	TTL, contact point	Ground insulator

Functional Changes to Trigger and EST Filters

GO had adopted a new method for the trigger and EST filter that was different from the conventional method. However, considering operation with cameras and external devices other than GO, compatibility with the conventional method was considered important, so the conventional method was changed.

GO-4K is now based on the conventional method.

<Status of firmware support>

Up to firmware Ver. 0.8.0: New method

From firmware Ver. 0.8.3: Conventional method

Switching function will be implemented by future firmware upgrade.

<Differences by method>

[New method]

Detects input signal changes (L to H, H to L) and immediately generates a signal.

After signal generation, the state of the input signal is ignored for the specified filter value.

[Conventional method]

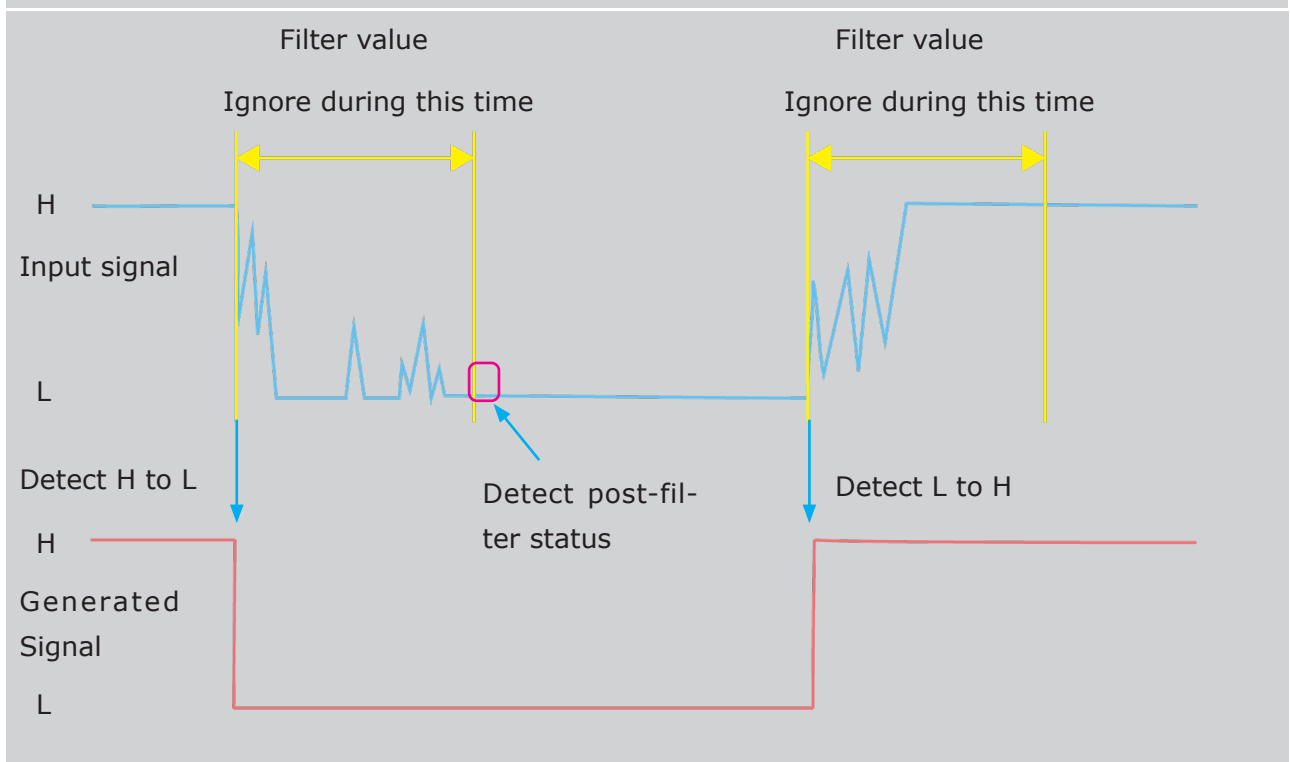
The state (L or H) of the input signal is detected, and the internal counter is raised or lowered according to the state, and a signal is generated when the specified filter value is met.

Example: In case of negative polarity (L is valid) L: Raise counter, H: Lower counter

[New method]

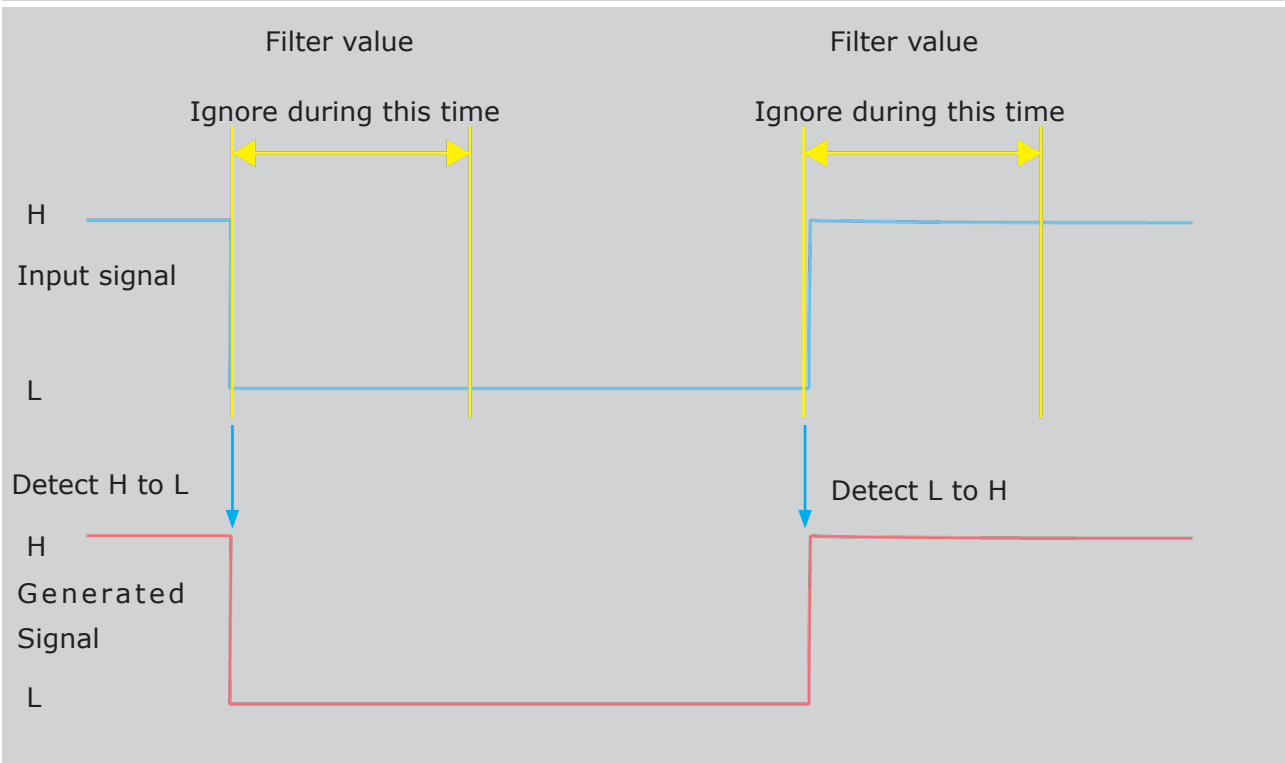
Detects input signal changes (L to H, H to L) and generates signals immediately.

After signal generation, the input signal status is ignored for the specified filter value.



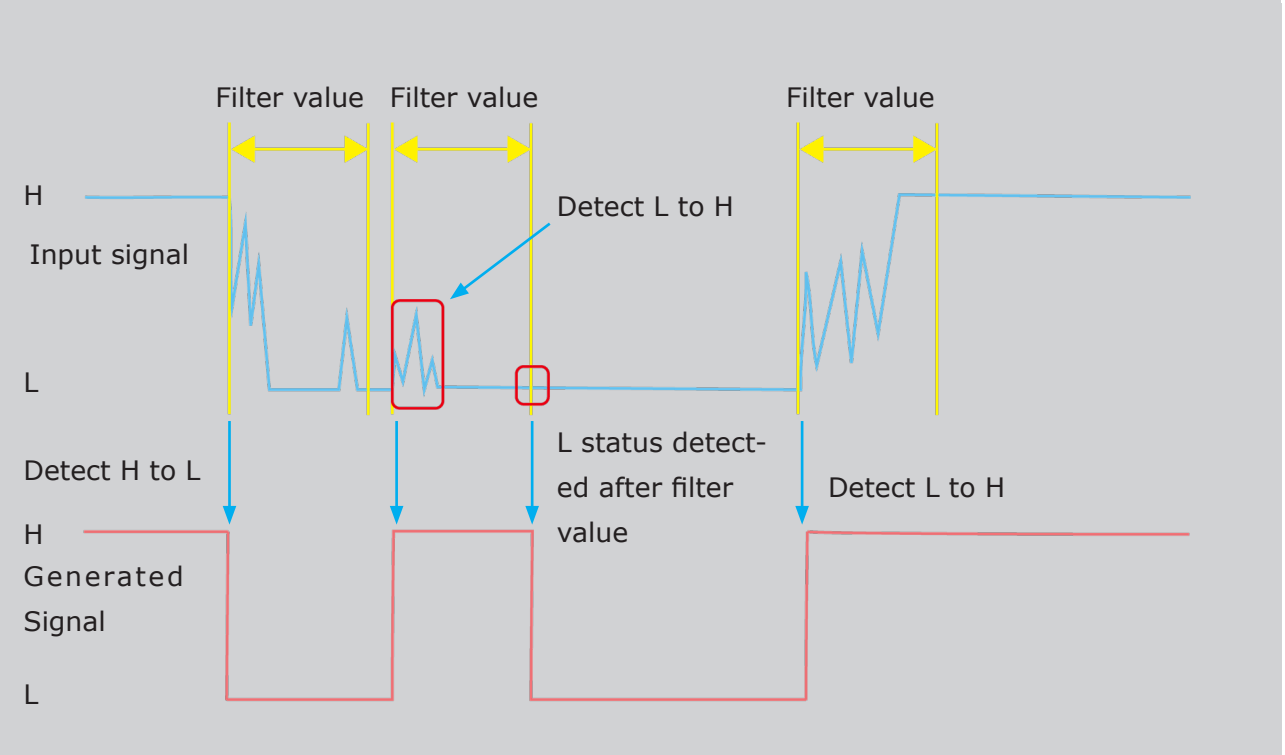
[New method] Advantages

Inputting a square wave with no noise does not cause a delay in the filter value.
 (No effect even if the filter value is set to a large value)



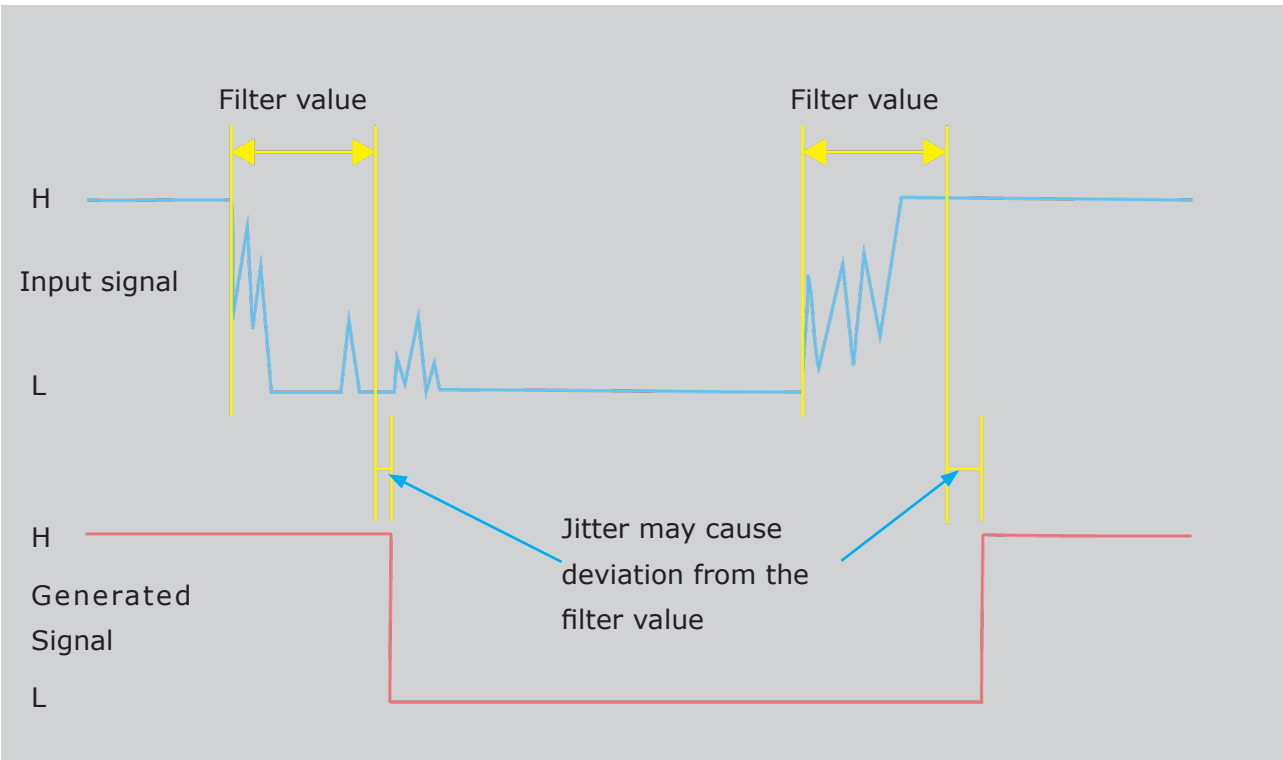
[New method] Disadvantages

Small filter value is easily affected by noise.
 Not compatible with conventional cameras.



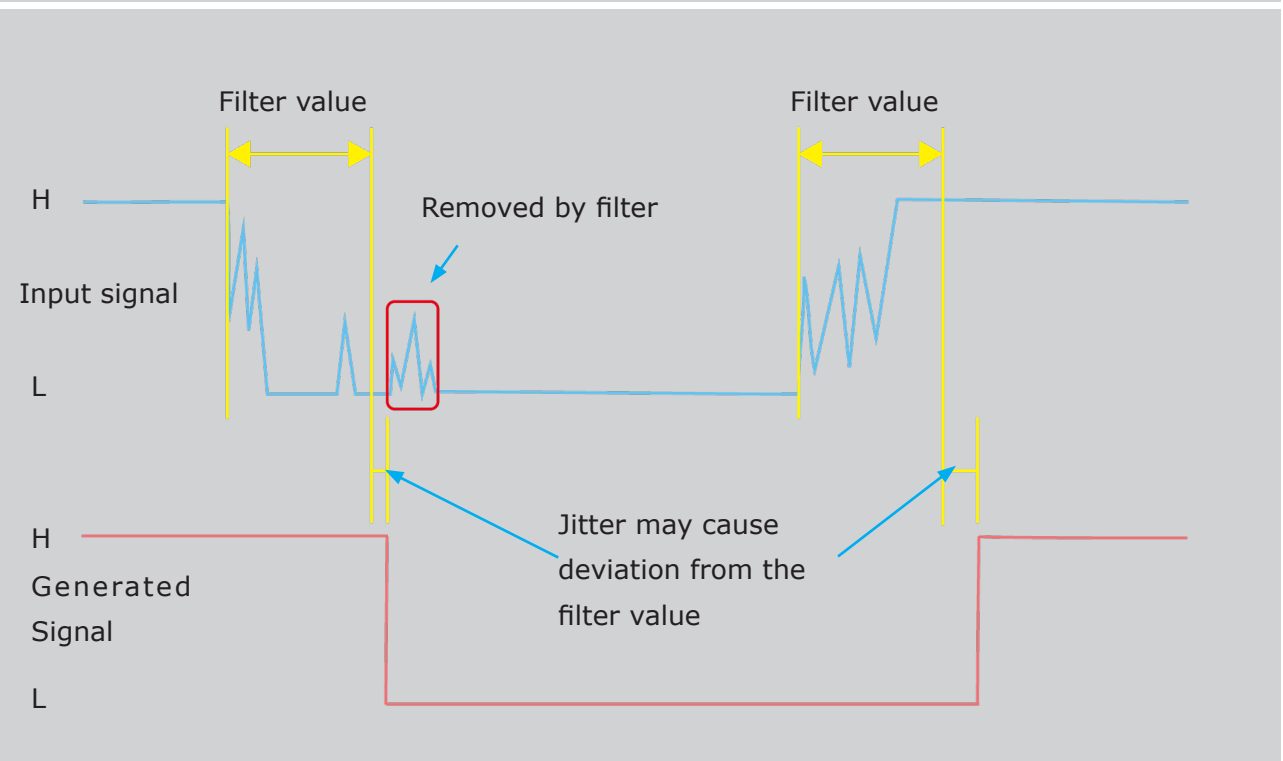
[Conventional method]

The state (L or H) of the input signal is detected, the internal counter is raised or lowered according to the state, and a signal is generated when the specified filter value is met.



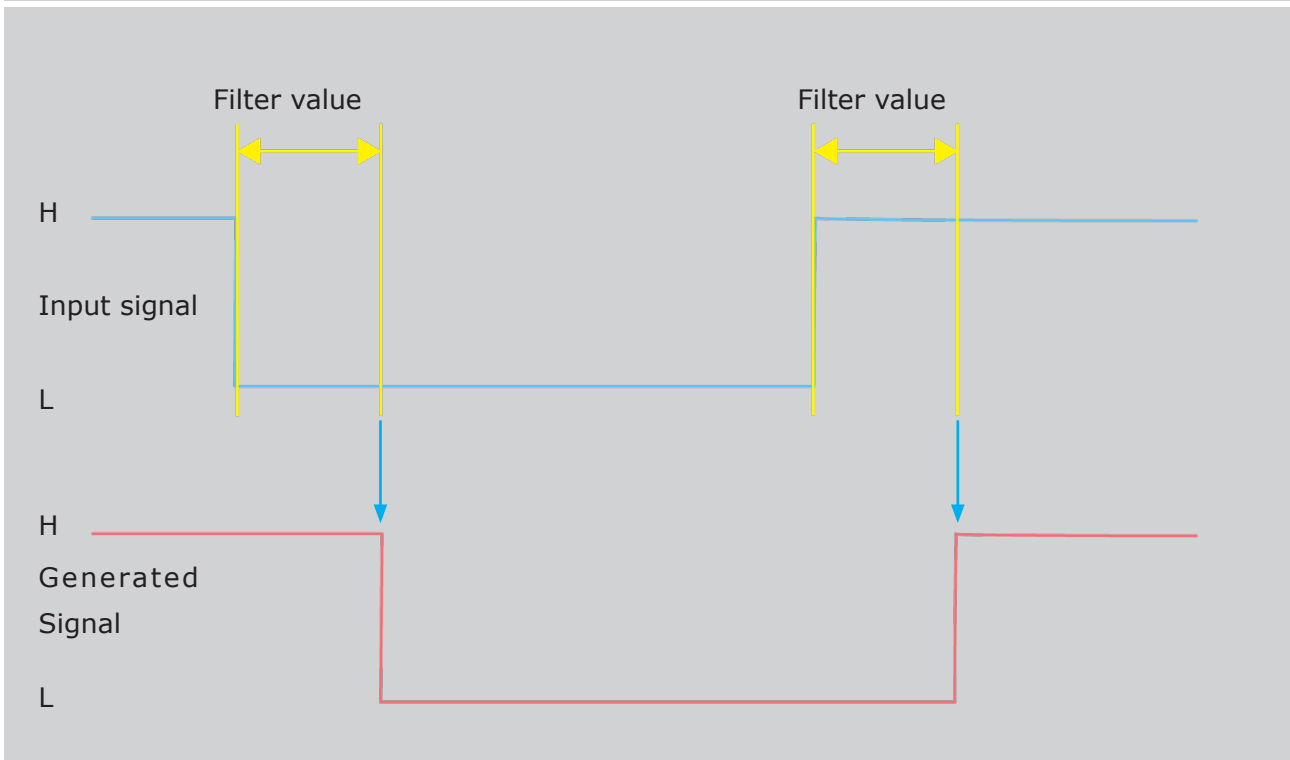
[Conventional method] Advantages

Less susceptible to noise even with a small filter value



[Conventional method] Disadvantages

Even if a square wave with no noise is input, a delay in the filter value occurs.





SYNC-OUT connector

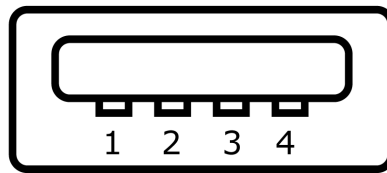
Application	EPO/IRIG-DCLS/TRIG OUT output (select one)
Model	BNC receptacle R132-002612000
Compatible Plug	BNC plug
Signal Level	CMOS level, isolated.
EPO function	Outputs exposure signal. With polarity inversion function
IRIG function	The time is synchronized as a IRIG-B DCLS. IRIG generated internally is outputted.
TRIG OUT function	Outputs a trigger signal.

Pin Configuration

Pin No.	Name	Direction	Function • Input/Output Level	Notes
1	SYNC-OUT	OUT	CMOS	Isolation
Shell	SYNC-OUT RTN	OUT	CMOS	Ground insulator

USB2.0 connector

Application	USB device connection (for firmware and internal updates)			
Model	Standard-A Receptacle			
Compatible Plug	Standard-A Plug			
Number of Connectors	1			
Standard	Compatible with USB2.0 standards and USB HOST, exFAT/NTFS			
Pin Configuration				
Pin No.	Name	Direction	Function • Input/Output Level	Notes
1	VBUS	OUT	USB power output, 5V/1.0A	
2	D-	I/O	USB2.0 HS signal	
3	D+	I/O	USB2.0 HS signal	
4	GND	OUT	USB power output return	
Shell	FRAME GND	-		



Pin Configuration Figure (from the side of the engaged connector)

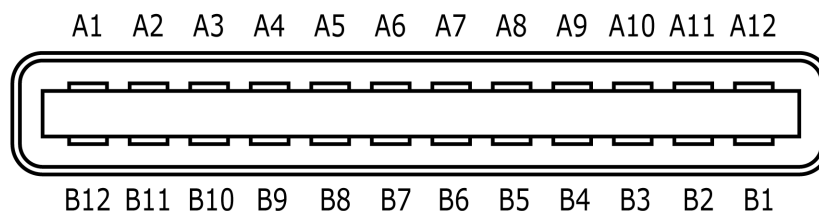
USB3.1 connector

Application	USB device connection			
Model	USB Type-C Receptacle(JAE DX07S024JAAR1100)			
Compatible Plug	USB Type-C Plug			
Number of Connectors	1			
Standard	Compatible with USB3.1 standards and USB HOST, exFAT/NTFS			

USB3.1 connector

Pin Configuration

Pin No.	Name	Direction	Function • Input/Output Level	Notes
A1	GND_1	-	USB power output return	
A2	SSTX_P1	OUT	USB3.1 SS output signal 1 positive	
A3	SSTX_N1	OUT	USB3.1 SS output signal 1 negative	
A4	VBUS_1	OUT	USB power output, 5 V, 3 A (for all four)	
A5	CC1	I/O	Config process signal 1	
A6	D_P1	I/O	USB2.0 HS signal 1 positive	
A7	D_N1	I/O	USB2.0 HS signal 1 negative	
A8	SBU1	I/O	Sideband Use 1	
A9	VBUS_2	OUT	USB power output, 5 V, 3 A (for all four)	
A10	SSRX_N2	IN	USB3.1 SS input signal 2 negative	
A11	SSRX_P2	IN	USB3.1 SS input signal 2 positive	
A12	GND_2	-	USB power output return	
B1	GND_3	-	USB power output return	
B2	SSTX_P2	OUT	USB3.1 SS output signal 2 positive	
B3	SSTX_N2	OUT	USB3.1 SS output signal 2 negative	
B4	VBUS_3	OUT	USB power output, 5 V, 3 A (for all four)	
B5	CC2	I/O	Config process signal 2	
B6	D_P2	I/O	USB2.0 HS signal 2 positive	
B7	D_N2	I/O	USB2.0 HS signal 2 negative	
B8	SBU2	I/O	Sideband Use 2	
B9	VBUS_4	OUT	USB power output, 5 V, 3 A (for all four)	
B10	SSRX_N1	IN	USB3.1 SS input signal 1 negative	
B11	SSRX_P1	IN	USB3.1 SS input signal 1 positive	
B12	GND_4	-	USB power output return	



Pin Configuration Figure (from the side of the engaged connector)

Shape, environment, precision, standards, disposables, dimensional drawings

Shape	
External dimensions (W x H x D)	W128 x H128 x D134.6 mm (excluding connectors, protruding parts, and mounts)
Main unit weight	About 2.9kg (excluding cables and options)

Environment	
Operating Temperature and Humidity	0 to 40 °C, 30 to 80%RH (no condensation)
Storage temperature and humidity	-10 to 60 °C, 20 to 80%RH (no condensation)

Precision	
Precision of recording time	±0.01% or less Apply the value of the inverse of the Frame Rate (frequency for (1 sec or more) during a given time period as the time precision.
Method of Inspecting the Recording Time Precision	By measuring the frequency with a frequency counter, EPO signal-output from SYNC-OUT connector-is recorded within a specified period of time (1 second or longer).

Standards	
Safety standard	EN62368-1
Electromagnetic Compatibility	EN55032
	EN61000
	EN5035
	FCC Part15 subpart B Class A

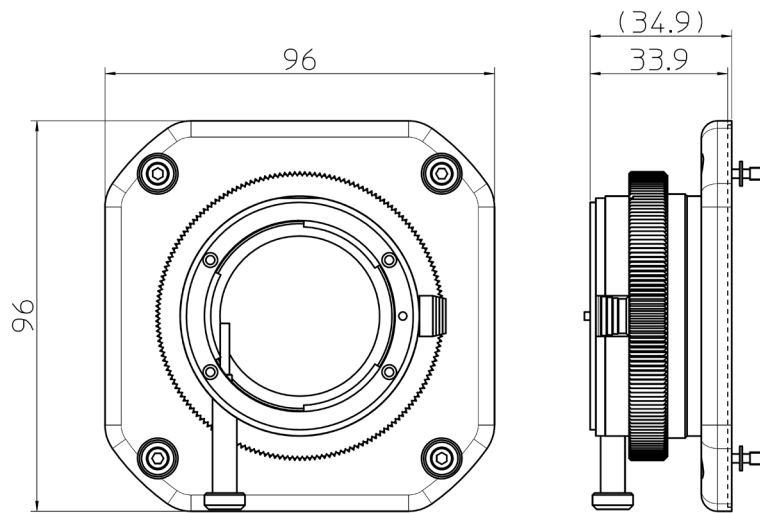
Disposables	
Clock Batteries	Consumption period: About 15 years (8 hours/day, 240 days/year) Replacement method: Replacement by ourselves

Main Accessories, Options

F Mount Adapter

External dimensions (W × H × D)	About W96 x H96 x D34.9mm (excluding protruding parts)
Weight	About 0.22 kg
Lens	F Mount lens (Vignetting may occur with some F Mount lens, depending on the image resolution)

Dimensions





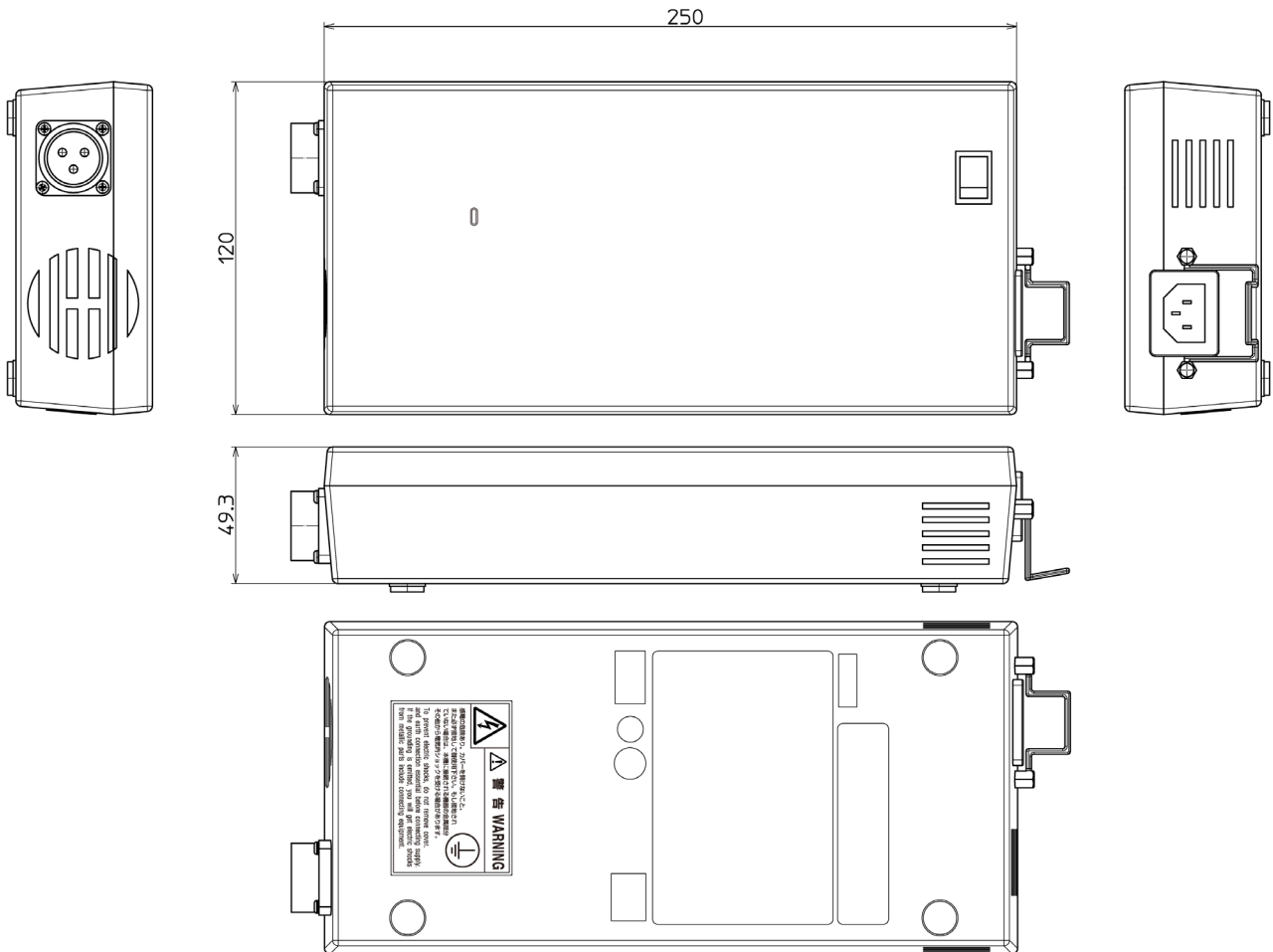
Control Software MLink

PC	Windows PC
OS	Requires Microsoft Windows 7 Ultimate / Professional (32/64bit) Windows 8 Pro (32/64bit) / Windows 8.1 Pro (32/64bit) Windows 10 Pro (32/64bit) Windows 11 Pro .NET Framework 4.7.1 or after
Memory	4GB or more (recommend 8GB or more)
Monitor	Full color 1024 x 768 or higher (1920x1080 or higher recommended)
HDD	2 GB or more for programs and logs. 250 GB or more for data (2 TB or more recommended). (depends on number of cameras and number of frames to be stored)
Network	1000BASE-T (LAN cable is Category 5e or higher)
Optical Drive	DVD-ROM drive

AC Adapter

External dimensions (W × H × D)	About 120 × 49.3 × 250 mm (not including connectors)
Weight	About 1.4 Kg
Operating temperature and humidity	0 to 70 °C, 5 to 95%RH (no condensation)
Storage temperature and humidity	-40 to 85 °C, 10 to 95%RH (no condensation)
Connector	Camera side: NANABOSHI NTE-243-RF AC side: AC 3pin connector
Input	AC100 to 240V, 47 to 63Hz
Output	DC28V, maximum of 14.29A

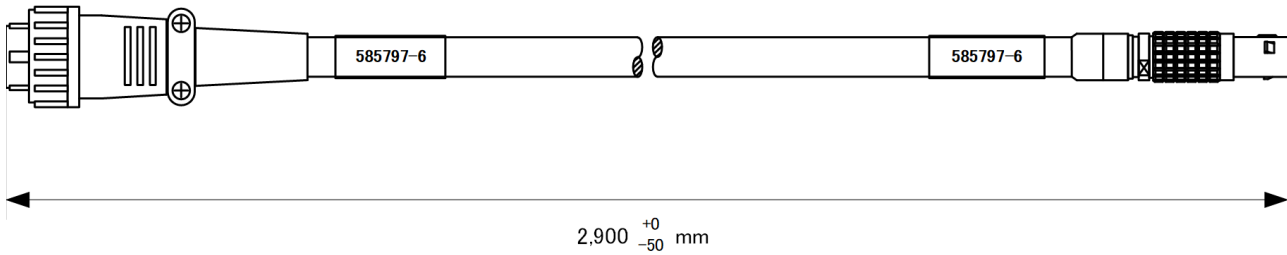
Dimensions





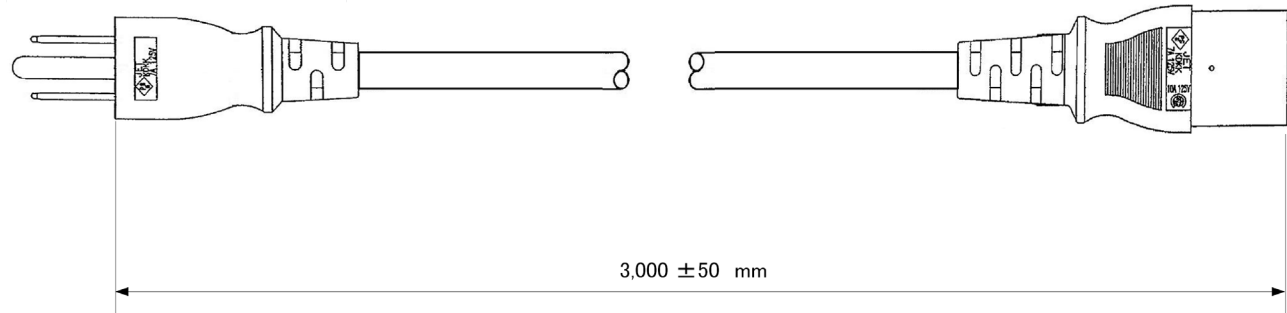
DC Cable between AC Adapter -Camera

Length	2.9 m	
Plug	AC Adapter side:	NANABOSHI NET-243-PM
	Camera side:	LEMO FGG.3B.307.CLAD10Z
Connector to the camera	DC INconnector	
Dimensions		



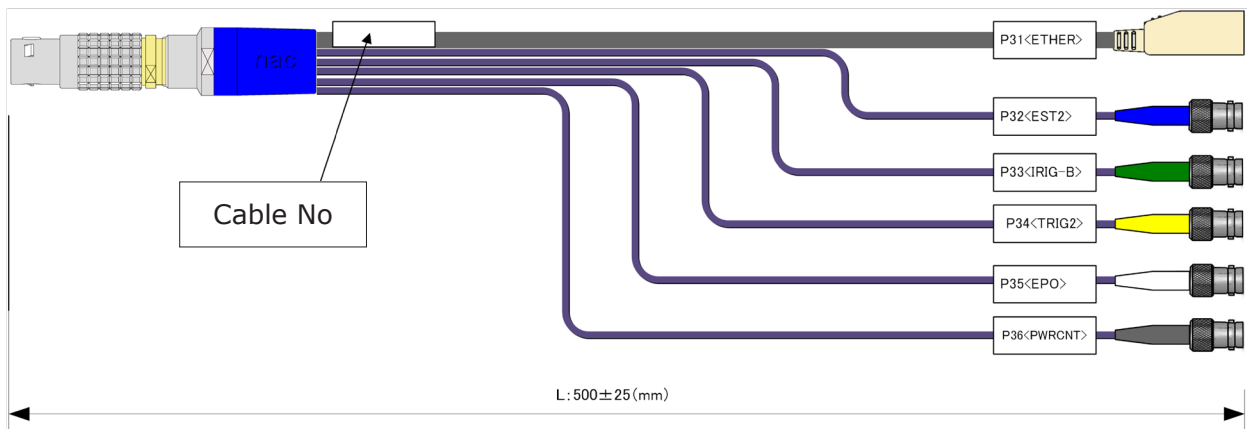
AC adapter AC cable

Length	3 m
Dimensions	



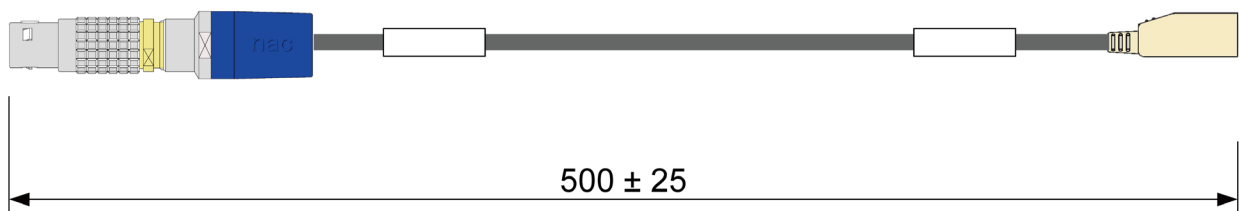
J3 Branch cable (Receptacle)

Length	0.5m	
Plug	Camera side	LEMO FGG.2B.318 Includes locking clip to prevent cable disconnection
	ETHER	RJ45 Receptacle
	EST2	BNC Receptacle
	IRIG-B	BNC Receptacle
	TRIG2	BNC Receptacle
	EPO	BNC Receptacle (GO-4K not supported)
	PWRCNT	BNC Receptacle
	Dimensions	



Simple J3 cable

Length	0.5m	
Plug	Camera side	LEMO FGG.2B.318 Includes locking clip to prevent cable disconnection
	ETHER	RJ45 Receptacle
Dimensions		





Battery

Discontinued Products

Product name	V Mount-type Li-ion battery Imicro-150
Manufacturer	IDX
Capacity	145Wh (14.54V 9.93Ah)
External dimensions (W × H × D)	About 72mm(W) × 97(H) × 67.5(D) mm
Weight	About 750g
Appearance	



Successor product

Product name	V Mount-type Li-ion battery Imicro-150P
Manufacturer	IDX
Capacity	145Wh (14.54V 9.93Ah)
External dimensions (W × H × D)	73 mm × 100 mm × 71.25 mm
Weight	About 810g
Input-output	1 D-Tap output / 1 USB PD [Type-C] input/output
Feature	USB PD compatible, D-Tap Advanced is not supported.
Appearance	



Battery Charger

Product name	V-mount type Lithium-ion Battery Charger VL-2000S
Manufacturer	IDX
Number of rechargeable batteries	2
External dimensions (W × H × D)	About 231mm(W) × 82(H) × 182(D) mm
Weight	About 1240 g

Appearance



Battery Charger

Product name	D-Tap Advanced Battery Charger VL-DT1
Manufacturer	IDX
Compatible Battery	IDX battery with D-Tap Advanced terminal
Number of rechargeable batteries	1
External dimensions (W × H × D)	About 110 mm (W) × 33.5 (H) × 62 (D) mm
Weight	About 230 g

Appearance



Battery Charger

Product name	USB PD Charger UC-PD1
Manufacturer	IDX
Compatible Battery	1
External dimensions (W × H × D)	68 mm (W)×68 (H) mm ×30.5 (D) mm(main unit only)
Charge current	3.0/3.25A
Cable length	About 1.2 m
Weight	About 219 g

Appearance



Battery Charger

Product name	USB PD Charger UC-PD2
Manufacturer	IDX
Compatible Battery	2
External dimensions (W × H × D)	69 (W) mm×87 (H) mm×32 (D) mm
Charge current	3.0/5.0A (USB-C port)
Cable length	USB Type-C 2 ports, USB Type-A 2 ports
Weight	About 290 g

Appearance





Revision History

Revision	Date of issue	Changes
A	February 2024	First edition (Camera firmware Ver. 0.8.3.)

Contacts

nac Image Technology Inc.

USA Contact

nac Americas Inc.

Address 193 Jefferson Ave, Suite 102 Salem, MA 01970 USA

TEL +1-833-600-0261

FAX -

E-mail sales@nacinc.com

Website <https://www.nacinc.com/>

European Contact

MESSRING GmbH

Address Friedrichshafener Straße 4c 82205 Gilching, Germany

TEL +49-8153-407-96-333

FAX -

E-mail sales@messring.de

Website <https://www.messring.de>

Japan/Asia Contact

nac Image Technology Inc.

Address 2-11-3 Kita-Aoyama, Minato-ku Tokyo 107-0061 Japan

TEL +81 3-3796-7903

FAX +81 3-3796-7908

E-mail: nacinternational@camnac.co.jp

Website: <https://www.nacinc.jp/>

